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INFLUENZAL MENINGITIS.

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Herbert Henry reported in an article in the "Journal of Pathology and Bacteriology," October, 1912, on "Meningitis due to Hæmophilic Organisms —so-called Influenzal Meningitis," nine cases of meningitis due to hæmophilic organisms, resembling the influenza bacillus, and discussed fully the bacteriology of the subject. He concluded: "There occur cases of meningitis, particularly in children under two years of age, due to a group of bacilli, the individual members of which, in culture, present the common feature of being hæmophilic. The disease is one that occurs sporadically, and so far there is no evidence that it is capable of assuming epidemic proportions. The exact nature of the organisms isolated from such cases has been very variously interpreted. To those who have not carried the bacteriology sufficiently far, they are identical with the b. influenzal of Pfeiffer. By others the organisms are described as being influenza-like, and one observer has sought to establish a definite entity, and has given the name "Septicæmic cerebro-spinal meningitis" to a disease caused by hæmophilic organisms of very high virulency. It is not impossible, too, that certain cases of so-called "leptothrix" infections are really of this nature."

The first case reported in England was by Douglas ("Lancet," 1907, vol. I., p. 86). This was followed by Dudgeon and Adams ("Lancet," 1907, vol. II., p. 684), in which meningitis and arthritis were parts of a pyæmic process. Batten ("Lancet," 1910, vol. I., p. 1677) described five cases of meningitis from the wards of Great Ormond Street Hospital. These cases were said to be definitely influenzal in character, the diagnosis being made from the morphology and cultural features of the organisms isolated in each case. Other cases were reported by Ritchie ("Journal of Pathology and Bacteriology," 1910, vol. XIV., p. 615), and by Athol Ross ("British Medical Journal," October 25, 1913). The only cases hitherto published in Australia were by Sayce ("Australasian Medical Journal," 1911, vol. XVI., No. 1), who reported seven cases of meningitis from which influenzal-like bacilli were isolated. He did not investigate the pathogenicity of the organisms.

Foreign observers who have reported cases and considered the problems, include Cohen ("Annales de l'Institut Pasteur," Paris, 1909, tome XXIII., p. 273), Cohoe ("American Journal of Medical Science," Philadelphia and New York, 1909, vol. CXXXVII., p. 7b), Fraenkel ("Zeitschrift fuer Hygiene," Leipzig, 1894, Band XXVII., seite 315), and Pfeiffer (vide Beck's "Influenza," in Kolle und Wassermann: "Handbuch der pathogenen Mikroorganismen," 1903, Band III., seite 403).

The gist of all these articles is that there occurs in young children a form of acute cerebro-spinal meningitis which cannot be distinguished clinically, or from naked eye post-mortem appearances, from other forms of the disease, but from the exudates of which an organism resembling the influenza bacillus can be obtained in pure culture. This organism appears to differ from the influenzal bacillus of Pfeiffer in its greater tendency to produce long forms in culture media, and its greater liability to produce septicæmia. As the pathogenicity of the organisms isolated in different parts of the world seem to vary somewhat, I am recording the details of my case in full, in the hope that it may assist in the elucidation of the problem.

A male infant, breast-fed, living in Newtown, was perfectly well up to the age of 8 months, when it sickened with vomiting and diarrhœa. These symptoms persisted for one month, and at the end of that time the mother noticed that its eyes "looked funny," and that the infant held itself stiff. The child was brought to the hospital in a semi-conscious condition. The eyes were open and staring, but not blind. There was convergent stabismus of the left eye. The head was retracted, and the neck muscles were rigid. The limbs showed slight rigidity, and Kernig's sign was partially developed. There was no history of a discharge from the ear. The tonsils were somewhat inflamed. The examination of the chest and abdomen failed to reveal any abnormal signs, in spite of the fact that there had been cough and vomiting. A provisional diagnosis of meningitis was made, and lumber puncture was promptly performed. Only a fraction of a cubic centimeter of cerebro-spinal fluid was obtained. The fluid contained polymorpho-nuclear cells, but no definite organisms were seen in the films. Cultures on blood smeared agar, however, gave numerous very small translucent colonies of bacilli, which were found to be Gram negative. The colonies were not at all like those of the colon-typhoid group, and I reported that they probably belonged to the influenza group. Cultures were made from the naso-pharyngeal discharge, and a Gram negative diplococcus in association with a Gram negative bacillus were grown. The latter was found to grow on agar only when blood was added, and resembled morphologically, both as far as the individuals and the colonies were concerned, the organisms found in the cerebro-spinal fluid.

The patient grew steadily worse, and apparently became blind. The head retraction and general muscular rigidity increased. Repeated lumbar puncture failed to withdraw any fluid. After a slight remission of all the symptoms, lasting for a day or two, death supervened eleven days after admission and thirteen days after the rigidity and ocular changes had first been noticed by the mother. The temperature had been very irregular throughout the whole

course of illness, varying from subnormal to 102 deg.; the average was about 100 deg. The pulse-rate was rapid, being nearly always above 130. The respiration was also rapid, but varied greatly, and became laboured toward the end. There was progressive loss of weight from 14 lbs. to 12 lbs.

At the autopsy, the scalp was sterilized as far as possible over one of the fontanelles, and a needle attached to a syringe was inserted into the brain. Some thickish pus was withdrawn apparently from the lateral ventricle. Microscopically this pus was found to be so degenerate that but few definite pus cells could be seen, and the films did not contain anything that could be distinguished as bacteria. Blood-smeared agar tubes were inoculated with the pus, and small translucent colonies of Gram negative bacilli grew. These bacilli did not grow on plain agar tubes. A diffuse leptomeningitis was found when the calvarium was removed. This involved both the vertex and the base, and extended over the whole length of the spinal cord. The pus was viscid and inspissated, covering the vessels throughout the arterial sulci in a thin layer, filling the whole ventricular system, and forming a somewhat dry, viscid layer on the surface of the spinal cord. No watery cerebro-spinal fluid was found in any situation. The consistency of the exudate accounted for the fact that only a small amount of fluid was obtained at the first lumbar puncture and none at the subsequent attempts. The final diagnosis was, therefore, cerebro-spinal meningitis, due to a hæmophilic, Gram negative bacillus, more closely allied to the influenza bacillus of Pfeiffer than to any other known pathological organism.

The bacterium isolated from this case has been closely studied as to its morphology, cultural characteristics and pathogenicity to laboratory animals.

Morphology.—Films made from 24-hour cultures reveal great variations in morphology. The most numerous individuals are minute, rather short rods, often arranged as diplobacilli. These are slenderer than the colon bacilli, and require a 1/12inch oil immersion lens and a high power eye-piece for close examination. Some individuals are so short as to approximate coccoid organisms. In addition to the minute slender rods, there are in nearly every field filamentous forms which are segmented and non-branching, and which stain more or less uniformly. The filaments are, as a rule, not straight, but are slightly bent upon themselves, sometimes with a definite loop at one extremity (vide Fig. 1). Films were made from older cultures, varying from 2 to 12 days. No striking change in the morphology of the bacilli are seen in these films. The staining, however, of many of the bacilli of all lengths is seen to be more irregular as the age of the culture increased. Subcultures always produced filamentous forms with 24 hours. Similar morphological characteristics were found in blood bouillon cultures.

Cultural characteristic—After incubation for 24 hours on blood smeared agar sloped at 37 deg. C., minute translucent circular colonies, smaller than a pin's head, were observed. The colonies became somewhat larger in 48 hours. Later they became more greyish in colour and comparatively opaque. At first the colonies were as clear as dewdrops, and might easily have been missed, if they had not been looked for carefully in a good light. They remained discrete. No growth occurred on plain agar, unless some blood were carried over on the platinum loop from the culture from which the organisms were taken. In this case a few minute colonies developed, but sub-cultures on to plain agar remained sterile.

Fig. I.

No growth occurred on ordinary solidified ox-serum or on ascitic agar, or yet on nutrient broth. Broth to which a few drops of human blood had been added was inoculated; growth took place on the surface of the sedimented blood corpuscles and organisms were also recovered from the supernatant broth. No growth took place on gelatine or on blood smeared agar at room temperature. The growth on blood agar did not appear to be as vigorous as on blood-smeared agar.

The marked variations in the size and structure of colonies under varying conditions are most interesting. An agar slope was smeared with the heart's blood of a guinea-pig dying after inoculation with the bacilli. After inoculation with the bacilli colonies appeared in small numbers. After a time the colonies increased in size, and became more translucent. Later they developed into colonies markedly different from the original colonies. They were several millimeters in width, as large in fact as an average-sized staphylococcus colony, and were rather opaque and greyish-like in colour (vide Fig. 2). It was thought at first that this vigorous growth might be due to passage through the animal, but a similar vigorous growth was obtained when a culture of bacilli that had never been through a laboratory animal was plated out on blood-smeared agar in such a manner as to give some of the colonies abundant room for growth. It was further found that the largest colonies were observed near a contaminating colony (? a yellow sarcina), and when

a subculture was made from one of the contaminating colonies on a portion of the margin of the plate where the bacilli were growing in small colonies, the nearest of the latter immediately took on vigorous growth. There can be but little doubt that the contaminating colonies diffused into the medium some substance, or caused a change in the medium in their immediate neighbourhood, and that this substance or change favoured the growth of the influenza-like bacillus. (Planet, Rehn and Schott-Mueller.

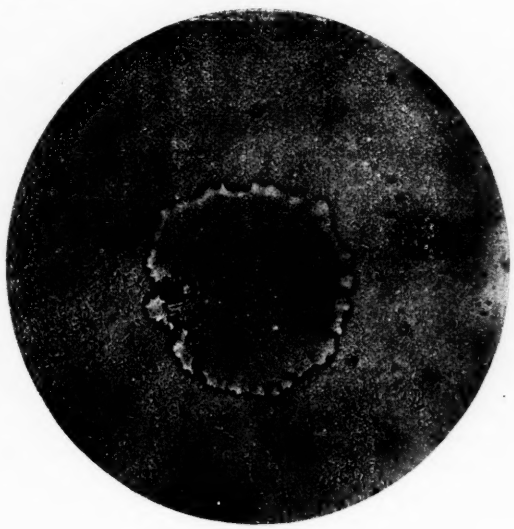

Fig. II.

The accompanying plates show the difference in size and structure between the uninfluenced colonies and the colonies influenced by the symbiosis. The photographs were taken slightly out of focus to

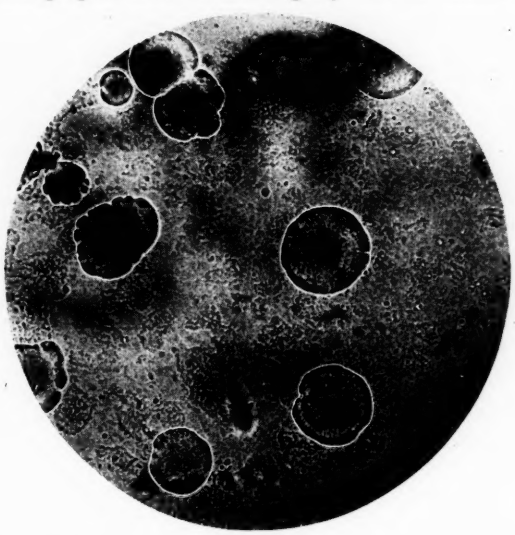

Fig. III.

bring out the margins more definitely. The outline of the younger colonies are almost circular, with but slight irregularities; the margins of the more luxuriant colonies are more irregular, and show a stippled surface. Though this organism is so delicate in its requirements as to growth, it survives for quite long periods on blood agar and in blood bouillon when kept at body temperature. Successful sub-cultures were made after 15 days' growth on blood-smeared agar. The bacillia survived for 28 hours when kept at room temperature (14 to 18 deg. C.), but were found to have died out after 52 hours at this temperature. No growth occurred under anærobic conditions.

Staining characteristics.—It will be remembered that no organisms were found in the films, either from the cerebro-spinal fluid or from the pus obtained from the ventricles. This failure was largely due to the feeble apparatus of the organism for the weaker stains. Saffranin was used as the counter stain in Gram's method, and this, when applied in the cold for three minutes only, gives a very poor staining effect. A rather strong dilution of carbol-fuchsin in distilled water should be used; one part in six parts of the solvent acts well. The stain should be allowed to act for about five minutes. The weaker stains give better results if used hot. When stained with care, the bacilli from young cultures take up the dye fairly uniformly, but bacilli from old cultures become irregularly tinted.

Pathogenicity.—Sub-cultures were made from the organisms cultivated from the pus obtained from the ventricles post-mortem, and animals were inoculated as follows: (1) One platinum loopful of the culture was inoculated into the peritoneal cavity of a full-grown guinea-pig. Death resulted in 36 hours. There was some peritonitis most marked around the liver and spleen, which were partially covered with fibrinous exudate. From this exudate the hæmoglobinophilic bacillus, together with a colon bacillus, were cultures, but the hæmoglobinophilic bacillus was recovered in pure culture from the heart's blood, pericardial sac and spleen. (2) One platinum loopful of the culture was inoculated into the peritoneal cavity of a young guinea-pig. The animal became moribund in 20 hours, and was killed. The same exudate was found in the liver and spleen. The hæmoglobinophilic bacillus was recovered in this case, also in pure culture from the heart's blood; it was the predominant organism in the peritoneal exudate, but was associated with a few staphylococci. It was also recovered from the pericardial sac.

In both these cases, the organism recovered were carefully examined, and were found to be identical in morphological and cultural characteristics with the original organism found in the infant's lateral ventricle. (3), (4), and (5) The growth on several blood-smeared agar slopes was emulsified in sterile bouillon. Three full-grown rabbits were inoculated, No. (3) subcutaneously with the growth from two slopes, No. (4) intraperitoneally with the growth from two slopes, and No. (5) intravenously with the growth from one slope. The animals were quiet and apparently somewhat ill for a couple of days, but recovered, and were alive and well after several months. (6), (7) and (8) Three other rabbits were

inoculated similarly with larger amounts of culture, and these animals also remained well. (10) A full grown monkey (macacus rhesus) was inoculated intra-spinally with two loopfuls of the culture emulsified in sterile bouillon. Some difficulty was experienced in inserting the needle into the spinal canal, and some of the emulsion may have leaked into the tissues behind the lumbar vertebræ. A little cerebro-spinal fluid was eventually withdrawn, and the greater part of the emulsion injected into the canal. The monkey was evidently ill on the following day, recovered a little on the second day, and later became very ill. The respiration was noisy and laboured, the monkey half reclined in its cage, with its head sunken on its chest, and it refused to take food. Death followed in a little over three days after the inoculation, without any definite symptoms of meningitis, such as retraction of the head, or rigidity, but apparently from a severe generalized infection or profound toxæmia.

Post-mortem the brain showed marked congestion of the cortical vessels, but no exudate. There was a scanty dry exudate on the lumbar cord. Definite early broncho-pneumonia with dry pleurisy and sticky exudate between the layers was found. No definite macroscopical lesions were found in the other viscera or serous cavities. Films from the surface of the lumbar cord contained some Gram negative bacilli, with characteristic filamentous forms. Cultures made from several different levels of the cord resulted in the recovery of the organism inoculated, together with a sarcina-like coccus. The latter, however, was present only in small numbers as compared with the hæmoglobinophilic bacillus. No cultures were made from the meninges of the brain, as no cerebro-meningitis was apparent, but from the bacteriological findings in the other viscera there is reason for supposing that the organism would have been found from any part of the cerebro-spinal system. The hæmoglobinophilic bacillus was recovered in pure culture from the heart's blood, liver, spleen and pleuritic exudate, and was the predominant organism recovered from the lungs, and pericardial sac. The organisms were again carefully examined, and were found to possess characters identical to those of the organism originally cultivated from the infant's ventricle.

The conclusion drawn from these experiments was that this influenza-like bacillus was markedly pathogenic to guinea-pigs and to a monkey, setting up a rapidly fatal septicæmia, notwithstanding that it had not been introduced directly into the blood stream. Comparatively large doses of the same organism only caused slight and temporary illness in rabbits, even when inoculated directly into the blood stream.

In regard to the channel by which these influenza-like bacilli reach the meninges, it is difficult to dogmatize. According to Henry, the most frequent primary lesion is an otitis media, but the organism has been found in many cases in the naso-pharynx, as it was in the patient described above. In severe cases the organism appears to reach the meninges by direct extension from these situations, while in other cases it seems to traverse the blood stream. Cohen, of the Pasteur Institute at Brussels, demonstrated in several cases that there was an influenzal septicæmia coincident with the meningitis. He, therefore, went so far as to call the disease "septicæmic cerebro-spinal meningitis. It appears that meningitis rarely occurs secondarily to a true influenza occurring in adults. Compared with the other forms of meningitis, this condition is rare. I have been able to find records of about 60 cases. So far as I can ascertain, this is the first case recorded in New South Wales in which the organism has been definitely isolated and identified. Sayce has reported seven cases occurring in Melbourne in the "Australian Medical Journal" of 1911. I have reason to believe, however, that through not employing blood containing culture media, pathologists from time to time fail to cultivate this delicate organism.

The relation of the influenza-like organisms causing meningitis to Pfeiffer's bacillus is somewhat uncertain. Pfeiffer found that his influenza bacillus did not cause septicæmia in laborotory animals, but when inoculated in large doses, they died from toxæmia. The organisms isolated from meningitis cases have, when investigated, usually been found to be capable of giving rise to septicæmia in one or other of the laboratory animals. The remarkable result which I experienced after inoculating the bacillus from this case into the spinal theca, viz., a violent septicæmia, seems to point to the infection in the case of the child being a septicæmic one, if the analogy from the monkey to the child be permissible.

I have to thank Dr. Blackburn for permission to publish the clinical notes, and Dr. Litchfield for permission to publish the post-mortem record.

THE DETECTION OF ALBUMIN IN HUMAN URINE.

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The term albumin is used by physicians to denote certain proteins that appear in the urine of some persons. The urine of healthy persons does not contain albumin except for brief periods following severe exertion, and under other exceptionable circumstances. In the urine of some persons albumin may be present without any other signs of disease of the kidneys. This constitutes the condition known as physiological albuminuria.

The presence of albumin in urine can be detected by tests which fail to reveal any albumin in the urine of most healthy persons. The presence of protein can be demonstrated in urine provided that special methods involving concentration of the urine be employed. The problem of detecting these traces of protein in large quantities of urine must be distinguished from that of detecting albumin in small amounts of urine. The detection of albumin in small quantities of urine is the theme of this paper.

Many tests have been employed to reveal the presence of albumin in urine, but no single test is so free from fallacy that dependence can be placed upon it in every case. I propose to place before you

the methods that have been used by me for some years. In order to detect the failure of single tests to show the reaction for albumin in urine I have employed four different ways of testing every sample coming under my notice. For some years I used a fifth test, but as it yielded so frequently results at variance with those obtained by other methods, I have ceased to employ it, and to recommend its use to students. The tests have been applied to the urine in this order:—

(1) The boiling test.

(2) Heller's nitric acid test.

(3) The test by precipitation with salicyl-sulphonic acid; and

(4) The test by precipitation with hydro-ferrocyanic acid.

The fifth test, formerly used by me, was that of precipitation by picric acid, or by Esbach's reagent.

The art of applying these tests may be considered under the following headings:—

Choice of the sample of urine.—It is preferable to use for the tests portions of the mixed urine of 24 hours. The most generally useful sample of the urine for 24 hours is that of the urine passed in the day plus the quantity passed during the following night. The amount of urine obtained in this way corresponds to the food and drink taken by the patient on the day the collection is started. The particular hour at which the collection is begun should be decided by the habits of the patient. A patient awakens and rises at 7 p.m.; urine is passed, and the time of micturition is noted. The urine passed subsequently in the day is kept. The urine passed during the night, if any, and that voided at the corresponding hour on the next morning are added to complete the specimen for 24 hours. Provided the patient is warned to pass water before defæcation, little urine will be lost, and a tolerably accurate estimation of the total quantity of urine for 24 hours will be obtained.

The urine should be kept in vessels which have been washed with soap and water and scalded with boiling water before use. Preserved in such vessels urine remains unchanged a sufficient time for the clinical chemical examination, unless it has already undergone decomposition in the bladder. In hospitals and institutions where the same vessels are continuously used to hold urine these vessels should be sterilized in steam each day. The whole of the quantities of urine passed at different times may be mixed together except when it is needed to examine separately the morning urine, the evening urine, that passed after special work, or that voided after occupying some special posture. The urine should be mixed thoroughly by inverting the vessel or by stirring carefully. The formation of froth in this procedure must be avoided.

For many purposes it is unnecessary to collect the sample of 24 hours, and a portion of urine voided at any time may be used.

Clarification of the urine.—Accurate tests for albumin are only possible when the urine is clear, bright and free from opacity. Samples kept in clean vessels remain free from bacterial growth, and do not become cloudy from the presence of micro-organisms before examination. Turbidity due to the presence of amorphous urates and phosphates, crystalline substances, blood and formed elements can be removed by filtration through paper. The physician will find it valuable to employ the papers made by Messrs. Schleicher and Schuell, and labelled No. 589, white label. These papers should be moistened with water on the funnel before use as filters. If necessary two papers may be employed as a doubled filter, and the urine repeatedly filtered through the same filter. Occasionally the examination of old or decomposed urine is required. If possible a fresh specimen should be obtained. If this cannot be done, the urine must be cleared as far as possible by filtration. It is difficult to clarify urine opaque from the presence of bacteria. The addition of a little barium carbonate, kaolin, or powdered glass, agitation and subsequent filtration will be found beneficial in some cases, though this treatment may remove some albumin. The addition of a few drops of potash, which throws down the phosphates of the alkaline earth metals, serves to form a flocculent precipitate which mechanically carries down bacteria. The urine is filtered, and then treated with an amount of acetic acid equivalent to the alkali employed. In these ways urine may be cleared before carrying out the tests.

Cleanliness of apparatus.—The test tubes and pipettes used in testing for albumin must be scrupulously cleaned. It is difficult to free glass apparatus from albumin once it has dried on the glass. Thorough washing even with soap often fails to remove the last trace of this dried albumin. It will, therefore, be found advantageous to clean all pipettes and test-tubes immediately after use. This is preferable to an attempt to clean them on each occasion before use. Pipettes are easily kept clean by washing them in cold tap-water after each occasion when they are used. Test-tubes may be kept fit for use by washing them with cold water several times under the tap, then giving them a scrub with a test tube brush with a little soap on it, and rinsing three or four times under the tap. They should be stood inverted in the rack.

The reaction to litmus.—Most urines give the amphoteric reaction, turning sensitive blue litmus paper red and red litmus paper blue. The reaction is accurately determined by placing with a glass rod a drop of urine on the dry paper, and shaking it off after 20 seconds. Some urines react acid. Such urines are usually dark-coloured and of high specific gravity. Other urines react alkaline. The latter urines contain alkaline carbonates, and effervesce on the addition of dilute acetic acid. They must be rendered faintly acid by the addition of acetic acid precedent to testing for albumin. After the administration of citrates, acetates, tartrates and carbonates, the urine contains much carbonate, and the addition of a few drops of strong acetic acid (40 per cent.) may with advantage precede the use of dilute acetic acid (2 per cent). When the urine has decomposed with the formation of ammonium carbonate from urea, the same procedure may be employed. Unless the alkaline urines are accurately

neutralized, fallacious results are readily obtained on applying the tests for albumin.

The specific gravity.—It is a good practice to take the specific gravity of the urine at the commencement of the routine examination of urine. This is done by floating a urinometer in the urine, and reading off the mark on the stem opposite the lower level of the meniscus of the superficial layer. This is thus read through the urine, the eye being at the level of the surface. This is sufficiently accurate for most purposes, though the reading should be made at 15.5 deg. C. (60 deg. F.). A large correction is necessary when the urines are tested at or near 35 deg. C., as may happen with specimens taken in cases for insurance. High specific gravities suggest the possibility of certain fallacies in some of the tests.

The boiling test.—About three inches of urine are introduced into a test tube. One drop of 10 per cent. acetic acid is added to any urine not acid in reaction to litmus, and the contents of the tube mixed by inversion. The upper inch of the urine is heated in a small flame, the test tube being held at the bottom. The heat should be applied gradually until the fluid boils. The dilute acetic acid (10 per cent.) is then added drop by drop to the hot urine. A persistent cloud shows the presence of albumin. A cloud may appear on boiling, due to the precipitation phosphates of the alkaline earth metals, but this cloud dissolves on the addition of acetic acid. When much albumin is present the cloud is replaced by a flocculent precipitate. This precipitate may be so considerable that the urine became solid. Five to ten drops of acetic acid may be added to the hot urine when a cloud is present, as there is no possibility of the solution of coagulated protein. When no cloud is present on boiling the acetic acid is added drop by drop, waiting five seconds between each addition of the acid until five drops have been added, the course of each drop through the urine being observed. If a cloud is formed in the path of the drop the further addition of acid should be performed very slowly. When the test is performed in this way, a faint cloud is readily observed by its contrast with the clear transparent urine below, especially against a dark background. Clouds may be also obtained due to the presence of mucin and nucleoprotein.

Heller's nitric acid test.—About one inch of pure colourless concentrated nitric acid is placed in a test tube. Five cubic centimetres of urine are drawn up in a pipette. The test tube is held inclined to the horizontal until the nitric acid reaches half way up the test tube. The pipette is held nearly horizontal, and the urine allowed to run slowly down the glass on to the urine. The line of junction between the acid and urine is examined. A white cloud at the line of junction indicates albumin. It is advisable to allow the test tube to stand for 30 minutes before drawing a negative conclusion. Care must be taken not to confuse coloured rings with the clouds. Similar clouds appear due to mucin and nucleoprotein. A cloud may appear from copaiba resin. Clouds formed above the line of junction may be due to urea nitrate or urates. The urea nitrate is, however, crystalline. When there is any doubt as to the nature of a cloud the urine should be diluted with an equal volume of water, and the test repeated. Urea and urates give clouds only in highly concentrated urine. The cloud due to resin of copaiba is soluble in alcohol.

Precipitation with salicyl-sulphonic acid.—This test was introduced by McWilliam. (1) The reagent is used in a saturated aqueous solution. Five drops of the solution are added to a test tube three-fourths filled with urine and mixed by inversion. The urine shows a flocculent precipitate, a cloud or an opalescence according to the amount of protein present. Any urine not alkaline in reaction yielding no opalescence with this reagent is free from albumin. Precipitates may form with mucin, nucleoprotein, and many other substances.

Precipitation with hydroferrocyanic acid.—One inch of urine is mixed with an equal quantity of 8 p.c. aqueous solution of potassium ferro-cyanide. A 10 per cent. solution of acetic acid is added drop by drop. A fine white precipitate is produced in the presence of albumin. Mucin is not precipitated but nucleoprotein may be. The test is rarely fallacious from precipitation of other bodies than protein.

Relative delicacy of the tests.—A urine yielding no positive reaction with any of the above tests is mixed with human blood serum. The amount of protein in the serum is estimated gravimetrically, so that it is possible to measure accurately the dilution of the protein in the urine. As this takes time, the serum is diluted with urine, and the exact figures obtained when the albumin in the serum has been estimated. Care must be taken that the temperature of the urine is 15 deg. C. The dilutions are made with considerable quantities of the serum diluted with urine, at least 50 c.cm. being diluted each time. A series of dilutions of orders of magnitude, 1 in 20,000, 1 in 25,000, 1 in 30,000, 1 in 100,000, 1 in 500,000, and 1 in 1,000,000 are made. Some results are shown in the table:—

Dilution of albumin.	Boiling test.	Nitric acid test.	Salicyl-sulphonic acid test.	Hydro-ferrocyanic acid test.
1 in 20,000 ..	+	+	+	+
1 in 25,000 ..	+	?	+	+
1 in 30,000 ..	+	—	+	+
1 in 100,000 ..	+	—	+	+
1 in 500,000 ..	+	—	+	?
1 in 1,000,000 ..	?	—	?	—
No albumin ..	—	—	—	—

+ = positive reaction when the test is carried out as described supra.
— = negative reaction when the test is carried out as described supra.
? = reaction has been sometimes positive and sometimes negative.
The quantities of albumin represent parts by weight of dried protein in parts by volume of the urine.

It will be seen that the tests vary greatly in delicacy.

The cold nitric acid test is much less sensitive than the others. It yields a positive result with a urine containing 1 part of albumin in 20,000 of urine. It yields a negative result with a urine containing 1 part of albumin in 30,000 of urine. It is only possible to detect 1 part in 25,000 in some

urines. Two tests are exceedingly sensitive, belonging to the series of the most sensitive chemical tests known. These tests are the boiling test and salicylsulphonic acid test. They detect 1 part of albumin in 500,000 of urine with certainty, and sometimes 1 part in 1,000,000 of urine. The hydroferrocyanic acid test always detects 1 part of albumin in 100,000 of urine, and rarely 1 part in 500,000 of urine.

These results have been obtained by me two or three times a year during the last ten years. They have been checked by some hundreds of students. As different urines and different albumin must be used on each occasion it appears probable that they give the limits of accuracy of these tests with some correctness. In the table the actual figures have been rounded off.

As the 24-hour sample of urine in this country does not often exceed 1 litre, the nitric acid test detects the presence of 50 milligrams of dried protein in 1 litre of urine. This is equivalent to an admixture of 1 c.cm. of blood serum to the litre. The hydroferrocyanic acid test detects an admixture of 0.2 c.cm. of blood serum, and the salicylsulphonic acid and boiling tests an admixture of 0.04 c.cm. in the litre. In this way it is possible to determine how much serum has passed the kidney in any case. Figures like these also give data to form a judgement as to whether the albumin present in a case is due to the inclusion of cellular elements or to the entrance of proteins from the blood.

The presence of nucleoprotein.—Certain writers distinguish between nucleoprotein and albumin. I have invariably found that albumin accompanies nucleoprotein in urine. For clinical purposes nucleoprotein may be regarded as albumin. Nucleoprotein may be distinguished from the other proteins found in urine by its precipitation with dilute acetic acid in the cold. The test is conveniently carried out as a ring test.

It is now possible to discuss the use of these four tests. It may be granted that they are all of sufficient delicacy with the possible exception of the nitric acid test, which might fail to show a minute trace of albumin in the earliest stages of Bright's disease. The difficulties in their use are due to fallacies caused by the presence of drugs and the products of the oxidation of certain foods in the urine. These complicate some tests more than others. The use of several tests guards against error in applying any single test. It may be safely accepted (1) that any urine giving a negative result with the salicylsulphonic acid test is free from albumin, (2) that any urine yielding positive results with the four tests contains albumin, (3) that any urine yielding a negative result with the hydroferrocyanic acid test and faint positive results with the other three tests contains mucin, but not albumin*, and (4) that any urine yielding a negative result with the cold nitric acid test, and faint positive results with the other three tests, contains a trace of albumin.

REFERENCE.

(1) "British Med. Journal," 1891, vol. 1, 837, and 1892, vol. 2, 115.

* Such a urine yields a precipitate with dilate acetic acid in cold.

Reports of Cases.

A FATAL CASE OF MENINGITIS ASSOCIATED WITH AN INFLUENZA-LIKE BACILLUS.

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Before passing to a description of this case, I trust I may be excused if I refer shortly to records of some previous cases of an apparently similar nature.

In 1907 Douglas described the finding of an influenza-like bacillus in a case of meningitis, and this appears to have been the first British case of the kind in which bacteriological examination showed the influenzal nature of the infection.

Dudgeon and Adams, in the same year, described a case in which meningitis and arthritis were associated as part of a pyæmic process, and in this case a similar organism appeared to be the specific cause.

McDonald (1907-1908) described a leptothrix, occurring in the case of meningitis, the possible significance of which is referred to later, and in 1908 McDonald, in association with Ritchie, again describes this organism in a case of pyæmia with meningitis.

In 1910 Ritchie (Journal of Pathology and Bacteriology) described three cases in which meningitis was associated with a small gram-negative bacillus recoverable from the cerebro-spinal fluid. The organism grew only upon blood media, was non-motile, pathogenic to animals, and apparently only differed morphologically from the influenza bacillus as generally described, in that long filaments and involution forms appeared in culture. He describes the appearance in old cultures (but sometimes early) of many aberrant forms, namely, wavy spirals, exaggerated commas, elongated flask shapes, and long filaments.

Herbert Henry (Journal of Path. and Bact., 1912) describes a number of cases coming under his notice, generally in children of tender years, or infants, and nearly always fatal, in which an influenza-like organism occurring both intra- and extra-cellularly in the spinal fluid, appeared to be the cause. He again describes tiny bacilli and long filaments, and refers to the fact that the organism is essentially hæmophilic, and that this filament formation varies in frequency in certain cases and certain cultures.

He says, moreover, that examined side by side with the true influenza bacillus, they are neither culturally nor morphologically distinguishable from it; but that in animal inoculations a fatal result occurs with much more regularity than in the case of Pfeiffer's bacillus, and that the organism tends to kill by septicæmia rather than by toxæmia.

The case described below has so many points in common with these earlier records that I have thought it worthy of description.

The history of the case, as supplied to me by Dr. McGregor, of the Children's Hospital, Perth, W.A., is as follows:—

The patient, R. G., aet. 3 years and 10 months, was admitted to the Children's Hospital on May 31, 1914. According to the mother, the child appeared to be quite well up till three days prior to admission. He then became irritable, listless and dull, and vomited a great deal. There was anorexia. Twelve hours before admission the mother noticed that the left side of the face was slightly swollen. The child coughed a little, but there was no nasal discharge. On admission he was well purged, and the motions were normal. He was very restless, and the left side of the face was flushed, swollen and glossy. Respirations were 30 per minute, temperature 103 deg. F., and the pulse rapid and full. There was some rigidity of the neck muscles, but none elsewhere. The tongue was coated and moist. The throat was a little reddened, but there was no coryza.

Nervous system.—The pupils were equal and active, but there was internal strabismus of the left eye. The knee jerks were absent. Kernig's sign was doubtful. Typical infra-nuclear paralysis of the left facial nerve was pre-

sent. The other cranial nerves were intact. There was no eruption upon the skin.

Respiratory System.—Harsh breath sounds were heard at the left apex, with sonorous rhonchi all over the chest on both sides.

Circulatory System.—The pulse was rapid and full, though regular. No abnormal physical signs were detected in the heart.

Urine was normal.

On the 2nd June, two days later, the child was very irritable when touched, and lay apparently asleep in a flexed attitude. There was marked rigidity of the neck, and facial paresis was more marked. There was no spasticity of the limbs. Kernig's sign was present. The strabismus had disappeared, and the physical signs in the chest could no longer be detected.

Lumbar puncture yielded turbid fluid not under marked pressure. Microscopically many leucocytes, chiefly polymorphs, were seen, and also numerous small organisms thought to be diplococci. The child remained in much the same condition, vomiting at times, and with a high irregular temperature, until the 9th June, when lumbar puncture was again performed.

This time the fluid was under considerable pressure, and very turbid. On the 11th June the patient had a rigor, accompanied by twitching of arms and legs. Later the pupils were equal, dilated, and inactive, and the child became almost comatose.

On ophthalmoscopic examination the right disc was seen to be blurred, and the vessels tortuous. The left disc was apparently normal. Lumbar puncture was again done, and the fluid, which was very turbid, and under considerable pressure, was sent to me for examination.

Spasticity of arms and legs developed, and occasional convulsions occurred. The patient died on June 15, after being comatose for about eight hours.

No post-mortem examination was made.

The third specimen of cerebro-spinal fluid which was submitted to me was turbid and slightly blood-stained. On centrifugalization a thick tenacious pus-like sediment was deposited. This deposit was found to consist mainly of polymorpho-nuclear leucocytes, together with large numbers of faintly staining, tiny gram-negative bacilli. The bacilli occurred both intracellularly and free in the fluid

At this stage no filamentous forms were observed.

Cultures were made upon blood-agar plates, and within 18 hours a profuse growth of tiny, transparent dew-drop-like colonies was visible; no other organism was present. Sub-cultures were made into broth, and upon agar and glycerine agar, but on these media no growth occurred. It grew well, however, in blood broth. Upon agar to which blood had been added before solidification the growth showed a tendency to form a fine confluent film-like growth, but upon agar streaked with blood the colonies remained discrete.

Microscopic examination of cultures showed after 10-12 hours the same tiny gram-negative bacilli seen in the spinal fluid, but after 24 hours' cultivation the organism had become extremely pleomorphic; chains of cocco-bacilli, long wavy filaments, twisted spirals, swollen oval and spindle-shaped forms, and the so-called exaggerated comma and flask-shaped forms frequently could all be seen in the same field.

Unfortunately no animal inoculation was carried out with the cultures from this case.

A guinea-pig was, however, given intra-peritoneally one cubic-centimetre of a 48-hour blood broth culture of a morphologically and culturally identical organism recovered from a sputum. The animal showed no signs of sickness, and remained perfectly well. It is probable, therefore, that the latter organism lacked the virulence of the former.

This organism, therefore, agrees in all particulars with those described by McDonald, Ritchie and others, and it seems probable that some of the so-called leptothrix forms seen in cases of meningitis were in reality aberrant forms of this bacillus. Whether it is or is not identical with Pfeiffer's bacillus, it would appear to be equally pathogenic. It is significant, moreover, that about the same time that the above case occurred I isolated exactly the same organism from a throat swab, and a sputum, and this during the prevalence of an influenza-like epidemic; while the history of some premonitary lung condition in the case of this child is certainly suggestive of a possible primary infection of the air passages.

It is interesting to note that Besson is of the opinion that the so-called pseudo-bacillus and Pfeiffer's bacillus of influenza are one and the same organism, and he states, moreover, that Pfeiffer himself is now of that opinion also.

Medical News.

Parramatta Medical Institute and F. S. Dispensary.

At a board meeting representing the Friendly Societies of Parramatta (N.S.W.), held last week, it was resolved that it was advisable to alter the constitution of the Parramatta Medical Institute and Friendly Societies' Dispensary so as to allow the Lodges to appoint their own Medical Officers, while remaining attached to the dispensary department of the institute. In the interests of the community it is earnestly to be hoped that the constitution will be altered in the way proposed, so that the conflict, which has existed for so many years between the Institute and the established medical practitioners of the historic town of Parramatta, may soon be happily terminated. The trouble has been due to the fact that the Institute has hitherto always paid its Medical Officers by a fixed salary regardless of the number of members to be attended. Members of the British Medical Association have for many years declined to accept positions where their services are remunerated in this way.

We are informed that the Canadian Medical Association will hold its annual meeting in 1915 in Vancouver, about the middle of June. The work of organization is being undertaken in part by the Vancouver Medical Association. Australian practitioners who propose to visit Vancouver during the course of the annual meeting are requested to communicate with Dr. J. M. Pearson, Hon. Secretary, Vancouver Medical Association, 633 Hastings Street West, Vancouver, B.C. It has been suggested that a leading Australian surgeon and physician may be invited to deliver one of the opening addresses.

The annual meeting of the American Medical Association will be held at San Francisco shortly after the date of the meeting of the Canadian Medical Association. Added to these two meetings, the Panama Exhibition will render the Pacific coast of North America especially attractive next year.

Dr. Hector R. Maclean, of Melbourne, has resigned his position of Chief Quarantine Officer in Hobson's Bay, which he held for close on a quarter of a century. Dr. Maclean was called upon by the Australian Army Medical Corps authority to take up military duties at Queenscliff, and proceeded to obey instructions. The Director of Quarantine found it necessary to appeal to the Defence Department to release Dr. Maclean from his military duties at as early a date as would be consistent with the smooth working of the corps.. He, however, recognized that the needs of the Defence Department must take precedence before those of the Board of Health. Dr. Maclean, on learning of the step taken by the director, intimated to the Medical Officers in charge of the contingent that he desired to remain on military duty. He, therefore, tendered his resignation to the Board of Public Health.

In reply to the Hon. A. W. Styles, the Chief Secretary of South Australia informed the Legislative Council on October 21, 1914, that during the absence of Dr. Ramsay Smith on military duty Dr. R. S. Rogers would act as City Coroner, and would receive remuneration at the rate of £1 1s. per inquest.

Medical Journal of Australia.

SATURDAY, OCTOBER 31, 1914.

Hormones.

But a few years ago the physiology of the ductless glands was entirely obscure. What little knowledge we possessed in regard to the nature and function of internal secretion was based largely on empyricism. The study of the pathology of myxœdema, acromegaly, and Addison's disease was the first means of the collection of scientific data in this connexion. It is, however, largely due to the excellent work of Starling that our knowledge in this important chapter of physiology has been extended. Starling's doctrines of the hormones has given a rational and scientific explanation of many previously obscure bodily functions. Just as a secretory gland produces ferments for the digestion of food and for other chemico-physical actions, so the ductless glands manufacture hormones for the more delicate physiological functions. It has been proved that many of these glands produce more than one hormone, and, further, that some of the duct glands manufacture besides the external secretion, an internal secretion, the active principles of which are of the nature of hormones. While Starling was able to demonstrate the nature of the action of these active principles by biological means, it has not been possible to determine any chemical property or structure. In the early days of the modern study of immunity processes, Ehrlich found it necessary to attribute physical action to suppositious chemical entities. We are still uncertain whether a specific amboceptor or a lytic ferment exists as a chemical substance, or whether the activity of antibodies or of ferments is not due to a property of some known complex chemical body, such as globulin or a protein. In spite of this want of knowledge, it has become a general practice to ascribe to any newly-discovered biological phenomenon a new substance. No one can question the correctness of the observations made in connexion with hæmolysis, agglutination, phagocytosis, or the active principles of the ductless glands; but it is quite another question whether we are justified in attributing the entire therapeutic action of specific blood serum or of extracts of various glands to these suppositious substances. It is quite possible, however, that the thyroid hormones or hormonic activity is largely responsible for the good result obtained in myxœdema.

Dr. G. R. Murray (1), takes a rather advanced view of the therapeutic value of hormones. He does not justify his assumption that organo-therapeutic action should be thus labelled. On the other hand, he admits that our knowledge of the nature and property of the hormones is very limited. He suggests that they are likely to be useful in four different ways. In the first place, they may be given in conditions which are due to the destruction of the secreting portions of certain ductless glands. He selects myxœdema as a typical example of such a disease. Heterogenous thyroidal hormones are said to act as well as autogenous hormones do. The action does not appear to be purely biological, inasmuch as the pathological signs of the disease return after the treatment is interrupted. Dr. Murray is able to give proof of this. His second field of usefulness for hormones is in conditions in which there is a physiological demand for an increased secretion which the glands are unable to meet. The example chosen is that of simple parenchymatous goitre. He has found that thyroid treatment is very useful in these cases, but warns the clinician to avoid it in early cases of Graves's disease. In the third place he suggests that hormones may be of use in those cases in which their known physiological action may be desired quite apart from any defect in activity of the patient's own glands. The example which he cites is still the thyroidal hormones, in this instances in the treatment of some skin diseases, such as psoriasis, and in some forms of obesity. Whether there is any real difference of quality between the second and third group is questionable. The beneficial action of the thyroid extract in some cases of psoriasis and of the falling out of hair is intimately associated with distant or vicarious thyroid action, and the conditions may be regarded as the result of the failure on the part of the body to supply an increased physiological demand for thyroid activity. In the last place Dr. Murray finds that hor-

(1) The therapeutic action of hormones, "Clinical Journal," July 29, 1914,

mones may be of service in various conditions in which the treatment is empirical. As examples of this, he instances tertiary syphilis, rickets, rheumatoid arthritis and nocturnal enuresis. He suggests that the beneficial action may be due to the iodine or to the stimulating action of hormones. Empiricism is a very convenient synonym for ignorance. After all, it is a matter of small importance whether the action of a remedy be understood before the remedy is introduced into practical therapeutics, or at a later date. The dissociation of iodine from thyroid activity implies a doubt as to whether the chemical entity is not usually active in thyroid secretion. It would have been better if Dr. Murray had left out the fourth group altogether. In all probability the beneficial action, which may at times be observed in the thyroid treatment of such a condition as rickets, is due to the unalloyed physiological action of thyroid secretion.

Dr. Murray continues to apply his thyroid reasoning to the case of supra-renal disturbances. Unfortunately, the hormone therapeutic theory fails in this connexion. Supra-renal extract has not proved of value in Addison's disease. The therapeutic action of supra-renal extract in constricting blood-vessels is, of course, physiological, and may be regarded as hormonic. In regard to the pituitary hormones, no better example could be quoted than that recited by Dr. Robertson and Dr. Ahern in the "Medical Journal of Australia" of October 17, 1914, pages 372-3. The patient in the case described showed definite evidence of the absence of pituitary action. He looked like a boy, although he was 28 years of age. He stood five feet and four inches in height, and weighed eleven stone and five pounds. His functions appeared to have been puerile. After the removal of the cyst found in his pituitary gland, he was given pituitary extract, and we are told that his weight diminished, that he became bright and energetic, and that testicular activity, which was previously dormant, was awakened. It is possible that increased knowledge may enable the physician to differentiate between cases which would derive benefit from the exhibition of extracts of the posterior lobe and pars intermedia, and those which would best be treated by extracts of the whole gland.

The organo-therapy of the ovaries and testes has, up to the present, been singularly lacking in positive results. The same may be said in regard to pancreas, which secretes hormones as well as digestive fluids. It would be well if physicians, having obtained a little knowledge from physiologists, were to be content to move slowly, following the physiologist, rather than to try to overtake him.

INFLUENZAL MENINGITIS.

In the present issue, two excellent articles dealing with a form of lepto-meningitis, caused by a bacillus morphologically and culturally indistinguishable from the bacillus of Pfeiffer, should be read with interest by all practitioners. The cases in themselves are important, and the careful study undertaken by Dr. Tebbutt of the characteristics of the infecting organism, should command general appreciation. But beyond these immediate reasons for a careful study of the articles in question, there is a general principle involved which may well claim the attention of practitioners as well as bacteriologists. At the meeting of the New South Wales Branch of the British Medical Association, when Dr. Tebbutt read his paper, there was no discussion, probably because everyone present felt that these matters were too technically bacteriological to justify critical remarks by clinicians and general practitioners. This attitude is a very natural one, but should not be fostered, for it is the business of every practitioner to make himself thoroughly conversant with the technical aspects of the infective diseases which he is called upon to treat.

The form of meningitis under discussion is clinically not distinguishable from other forms of lepto-meningitis. The symptomatology, course of disease and physical signs, including the results of the examination of the cerebro-spinal fluid, are apparently identical in all these suppurative lesions. Pathologically, there is a difference. The infecting organism in these cases is usually Weichselbaum's meningococcus, Fraenkel's pneumococcus, or some other pyogenic organism, while in the cases recorded, a

hæmoglobinophilic bacillus was found. Dr. Tebbutt points out that this organism presented certain distinct features which are not shared by Pfeiffer's bacilli, as we know them. The colonies in symbiosis with sarcina grow to a great size; the bacilli take on filamentous forms, and, further, the bacteria when injected into a monkey produced distinct septicæmia. The first question to be decided in this case is whether the bacilli are influenza bacilli. This question opens out the general principle referred to above. It is not too early for bacteriologists to face a problem which has been presented to them in a variety of forms. This problem in its interrogatory form may be stated as follows: How far can the characteristics observed in bacteria, grown under artificial conditions and on artificial nutrient media, be regarded as typical of the group or species? We have learned that bacilli of the coli group, when studied under artificial conditions, do certain things with certain sugars. No one could imagine that a bacillus would be endowed with one character which differentiates it from other bacilli of being able to form acid and gas on a sugar which it is unlikely to meet under natural conditions. Moreover, it has been shown that mutations in the sugar reactions can be obtained by various additions to the culture medium. It may be useful to distinguish between the various members of the coli group by means of the sugar reactions, as long as no known biological differences are discovered; but by doing this, we are not justified in assuming a real difference in species. Practically every bacteriologist has described one or more members of the lactose fermenters, or of the group which produce neither acid nor gas on lactose. But every bacteriologist of experience recognizes that a coli bacillus at times presents slight variations from what is regarded as its normal characteristics. It should, therefore, be possible to ascertain something about these forms of bacteria which might be regarded as natural, innate characteristics, by means of which a proper classification and a working scheme of pathogenicity might be deduced. The two directions in which such investigations could be undertaken are (a) the biological, and (b) the genetic. So far no very serious attempt has been made to differentiate between the kinds of bacterial protoplasm forming the body of the bacilli or cocci. The work done on the so-called endotoxins is so superficial that it scarcely deserves to be included among the bio-chemical investigations. Micro-chemical methods are required for a true differentiation of functions of different bacteria, and until some subtle reagents are discovered, by means of which the nature of bacterial metabolism can be studied, no material progress can be made on these lines.

Much greater prospect awaits the investigator who attempts to study variability, mutations, and fixed characters from a genetic point of view. So little has been done hitherto, that it would seem almost presumption to hazard a guess as to what would be found as a result of these researches. But since science must always be directed to a limited extent by imagination, at all events in the suggestions for new paths of research, many have already speculated on this problem. Few will be found who doubt the common ancestry of the whole coli group; he would be a rash man who would hold the view that the pneumococci, the gonococci, and the meningococci had different progenitors. If a common ancestry could be proved for organisms which present fairly well marked morphological or cultural characters, how much more reason would exist for accepting the existence of a slight variation or sport in the case of a bacterium, which differs only in one peculiarity, and that an artificially-produced one. We cannot but form the opinion that the bacilli found in these cases of influenzal meningitis are true Pfeiffer bacilli, which have undergone a change in the power of producing septicæmic, instead of a toxæmic action. This new character would have been dormant, if Professor Bateson's views are correct, and under these circumstances the acquisition would be an indication of a degeneration process.

ACCOMMODATION FOR MEASLES PATIENTS.

Melbourne appears to be suffering from the result of too many responsible local authorities. The municipal councils have awakened to the fact that there is a shortage of beds for the reception of persons suffering from measles. It appears that the Council of South Melbourne has addressed a circular letter to the other Melbourne Councils asking for co-operation in the task of providing for the institutional treatment and care of measles patients within

the metropolitan area. Tales are told of children in the acute stages of measles being taken from institution to institution only to learn that no accommodation was available. On October 14 a letter from the Ministry of Health was read before a meeting of the South Melbourne Council, in which it was pointed out that the Minister of Health had, on August 24, "directed the Committee of the Queen's Memorial Infective Diseases Hospital to admit to their hospital any poor person sick with measles applying for admission, who is an inhabitant of any of the municipal districts whose Councils contribute to the maintenance of the hospital." It appears, however, that the Committee of the hospital was not prepared to act on this direction of the Minister, probably because the institution was not well adapted to this purpose, and in view of the Committee's pending retirement, the necessary reforms were being left to the new Committee. The Minister announced in his letter that the new Committee would be installed within a week or two, and that "it is hoped that there will be no further cause for complaint." This hope, however, is unlikely to be realized. The Mayor of Port Melbourne stated on October 13, at a Council meeting, that the Government had erected a measles ward adjoining the Infectious Diseases Hospital. When completed the ward was found to be quite unsuited to its purpose. It was too small, ill ventilated, and the drainage was faulty. Furthermore, it has been stated that the locality on which the hospital is situated is damp and cold. It was also stated that an anomalous condition prevailed inasmuch as provision for the reception of measles patients from elsewhere has been made at Coode Island, whereas none had been made for the metropolitan cases.

The duty of making suitable provision for all cases of measles rests with the municipal authorities. The Ministry of Health should see that the accommodation is adequate, that the structure and equipment are in accordance with modern requirements, and in short that the municipalities carry out their duties properly. If, as it appears is the case, the existing hospital is unsuitable, wards should be erected on some other site. It is little short of scandalous to brook delay in so important a matter.

THE MILK SUPPLY OF MELBOURNE.

A highly interesting problem was discussed on October 13, 1914, at the Public Health Department, Melbourne, by representatives of the Retail Master Dairymen's Association, the Board of Health, and the Agricultural Department. The conference had been convened with a view of determining whether it would be possible to place the control of the milk supply for the metropolis under one authority. It appears that the Board of Health, the Department of Agriculture, and the various municipalities have the power of regulating and supervising the sale of milk. The President of the Retail Master Dairymen's Association expressed the opinion that the present system of the administration of the acts regulating the milk supply to the metropolitan area was highly unsatisfactory, and that it was in the public interest that the law should be so amended as to guarantee a proper supply of healthy milk while the interests of the trade were preserved. He suggested that there should be one central authority, that there should be a limitation of the number of licenses granted for the distribution of milk, and lastly that all milk-cart drivers should be licensed. In regard to his demand of a single authority to control the supply and distribution of milk, he stated that not only would this effect economy, but it would also ensure increased efficiency. His Association was not prepared to advise as to which authority should retain the control. A discussion followed, and the meeting stood adjourned until October 27, 1914.

There can be no doubt that multiplicity of control in any matter leads to an unsatisfactory result. This is especially so in the case of milk. The practical problem raised is somewhat wider than would appear from the case as stated by the President of the Retail Master Dairymen's Association. If a milk supply is to be completely satisfactory, a partial guarantee must be given to the public that the milk sold is pure, free from contaminating dirt, and does not contain more than a stated number of bacteria in any given volume. It is extremely doubtful whether an ordinary commercial firm would adopt the precautions necessary to achieve this result. The supply could be taken over by the State, and the distribution entrusted to private firms under definite restrictions, or a State recognition could be given to certain dairies at which all the precautions necessary for the production of pure milk were taken. Legislative control of the milk supply and distribution, at best, only protects the public from certain forms of adulteration or tampering. The extent of the benefit derived from such measures will depend on the way in which the acts are administered. Under no circumstances is it advisable to vest the control in the municipality, since the interpretation of the Acts, and the regulations for their administration would not be uniform. As this matter is essentially a hygienic one, the proper authority would be the Board of Health.

THE AUCKLAND DIOCESAN SYNOD AND HEALTH PROBLEMS.

Through the courtesy of the Honorary Secretary of the Commission on Special Questions (Auckland Diocesan Synod), we have received the second annual report, dated October 23, 1914. This document details the various actions taken by the Commission in connexion with social problems. Two of these have reference to hygiene. The first is connected with the town planning movement. A recommendation was made by the Commission in regard to giving facilities for the erection of rural workers' dwellings. This recommendation has been incorporated in a Bill (the Counties Act Amendment Bill), which was introduced during last session. The Commission further assisted in the arrangements for the lecturing tour undertaken by Messrs. Reade and Davidge, and also contributed to the guarantee fund for this purpose.

The second subject dealt with was that of the prevention of contagious diseases; in other words, of venereal diseases. A conference with the representatives of the British Medical Association in New Zealand was held, and the views of the members of the Australasian Medical Congress were also considered. It is stated that "the Commission is prepared to recommend the endorsement of the general principles of the necessity of educating the public, but emphatically expresses the opinion that no education that fails to raise the moral sense of the community can be adequate or really effective." It appears from the report that the Commission has difficulty in arriving at a definite opinion as to the advisability of an unreserved teaching of the dangers attached to illicit sexual intercourse to boys and girls of an age before such intercourse is usually indulged in. We are told that "it would, at present, be premature to express approval or disapproval of the details of educational measures proposed by the medical profession either in Britain or in Australasia."

This subject has two distinct and separate aspects. There is the moral or religious aspect, in regard to which the medical profession has no right to assume a dogmatic attitude. From a sociological point of view, it is the desire of everyone to encourage behaviour which, according to precedent and custom, is regarded as ethical. Beyond this, in view of the very varied views on religious matters held by medical practitioners, we cannot go. The second aspect is a purely hygienic one. The first duty of the medical profession is to suggest and assist in carrying out measures which, according to the considered opinions of those who have studied the question more closely, will result in a reduction in the incidence of the diseases in question, or in a prevention of their occurrence. Experience has shown through the long centuries during which the Church controlled the educational and medical professions, and influenced to a large extent the legislative measures adopted, that no progress was made in any reduction of venereal disease. A disease can be stamped out in two ways. In the first place, the source of infection can be stopped, and in the second the population can be rendered immune. In regard to syphilis, immunity is not conferred by a previous attack, and even if the type of the disease tends to become less devastating in the course of generations of families which have successively become infected, but little prospect of a satisfactory result is held out by this method of prevention. In the case of gonorrhœa, the severity of the disease does not appear to be influenced by its occurrence in the ancestry of the patient. It is, therefore, necessary to attempt preventive measures in regard to syphilis and gonorrhœa by attacking the source of infection. The most natural method would seem to be to take such steps as would render it impossible for the disease to be propagated. But how? To tell young men and women that extra-nuptial intercourse is not to be indulged in, is wrong, and is contrary to an ethical code, has been the practice ever since the world was inhabited by speaking human beings. It has proved useless. To instruct the young in regard to the very real dangers associated with such intercourse appears to have resulted in a sensible reduction in infection, but only to a slight extent. It is thought in some places that notification is a panacea for this ill, especially if the notification be compulsory, and be carried out with the name and identity of the patient. Notification, like early educational measures, promises to reduce the frequency of infection to a slight degree, but if it were adopted with penal clauses and with a divulgence of the identity of the patients, the medical profession would be forced to reserve a couple of days each month for the purpose of defending slander suits in the courts of law, or else the venereal patient would be driven into the hands of the charlatan to his enormous detriment, and with the result that the diseases in question would spread all the faster. Another prophylactic measure is regarded with favour by many experts. This is prompt and efficient treatment at a low cost, and in the easiest manner possible, so that the maximum number of infected persons would avail themselves of these therapeutic facilities, and the sources of infection would, for the time being at all events, be kept under a more or less strict control. There can scarcely be a second opinion as to the value of this measure. If combined with notification without disclosure of names, and with the fearless education of the young, we are convinced that this measure would effect a rapid reduction of the incidence of venereal disease. An efficient prophylactic may be discovered in the future, and this would probably result in a radical eradication of the diseases. In the absence of such a specific preventive, the duty of the profession is to clamour for education, notification and efficient treatment.

A DEATH UNDER ANÆSTHESIA AT THE MELBOURNE HOSPITAL.

The utility of a coroner's enquiry into the cause of death depends largely on the manner in which the evidence is taken, the thoroughness in which the main facts of the case are elicited, and the strictness with which all irrevalant matter is excluded. The coroner should, of course, be a medical man, for without medical training, it is impossible for him to ascertain with any degree of accuracy what the true cause of death was and what factors played a contributory part. It should, moreover, be borne in mind that a coroner's inquest is primarily intended to distinguish deaths following on what is legally termed "natural causes," which are usually the highly unnatural and often readily preventable diseases affecting man, from deaths resulting from accident or foul play. Incidentally, the enquiry may be rendered instrumental in securing a person who, according to prima facie evidence, may be held to be responsible for the death. A coroner has no business either to comment on the action of a witness who is not legally responsible for the occurrence of death, or to "recommend" other bodies to take steps to modify practice or custom, save when the neglect of a definite precaution may be held to endanger lives.

In a case heard on October 22, 1914, by the City

Coroner in Melbourne, the subject of enquiry was the death of a man who had contracted a septic cellulitis of the arm, and who has died under ethylchloride and ether anæsthesia, administered by Dr. Pearce, a member of the staff of the hospital. Dr. Hogarth, a resident medical officer of the institution, was in charge of the case, and determined, with every justification, to make a number of incisions into the subcutaneous tissue. The anæsthetic was administered in the usual manner, and the whole procedure only occupied six or seven minutes. Immediately after the last incision was made, the patient stopped breathing. Deaths of this kind are unfortunately not rare, and it was, therefore, quite unnecessary for the Coroner to enquire of the medical officer how long he had been in practice. The result would have been the same had an older and more experienced practitioner been in charge. In his summing up, he stated that the anæsthetic should not have been given without a more capable opinion being obtained as to its desirability. It was not a case of criminal negligence, but he would draw the attention of the hospital authorities to the matter, and they could take any action they might think fit. He appears to have overlooked the fact that in the eye of the Law, every registered medical practitioner has the same knowledge and skill as any other medical practitioner. Registration is the legal stamp that a practitioner is fit to look after the lives of persons when ill, and the remark that "a more capable opinion" should have been sought was not only unjustified, but entirely outside the province of a coroner. It is to be hoped that the hospital authorities will receive this piece of gratuitous advice, and "lay it on the table." We offer Drs. Pearce and Hogarth our sympathy that they were placed in so uncomfortable a position, after they had done what was right in their attempt to save a man's life.

BACILLOPHOBIA.

South Australia appears to be suffering badly from an attack of bacillophobia. According to an editorial article, published in the "Register" of October 17, 1914, the Consumptive Home on North Terrace should be shut up forthwith, because the grounds of the home are divided from the beautiful Botanic Gardens "by only a barbed-wire fence," which is not "guaranteed to be a barrier against microbes." We presume that the reader of the article in question, in the absence of any very definite information, would imagine a tubercle bacillus to be possessed of the wings of a dragon fly, or the jumping facilities of a flea. Once past the barrier, the army of bacilli would march, fly or jump in close formation, like the German legions, and seize upon non-combatants, inflicting untold injury. Ten years ago a lunatic asylum stood upon the site of this Home for Consumptives, and in spite of popular prejudice, the building was converted into an institution for the care of cases of advanced pulmonary tuberculosis. The "Register" speaks of the "dreaded White Plague," with capital letters, presumably to enhance the horror of the situation. The situation of the Home is not ideal. It is situated in a dusty and hot street, which is certainly not good for the inmates. But in other respects there does not appear to be any ground for objection to the continued existence of the Home, and from the prophylactic point of view, there is a very large number of reasons why such institutions should be encouraged. The public is being educated nowadays on all sorts of technical matters. Surely it is time to regulate the kind of instruction which it receives on medical matters. It can serve no useful purpose to exaggerate the significance of the tubercle bacillus. Since Koch taught the world that tuberculosis was due to a specific bacillus, it has gradually come to the knowledge of hygienists that the disease is spread not by hereditary means, but by some form of infection. Confusion arises in the public mind directly the word "infection" appears. A nice discrimination between an infective disease which is highly contagious, such as morbilli, an infective disease which is passed on without any direct contagion, such as malaria, an infective disease which is propagated by fomites or infected material, and which is mildly infectious or highly infectious, such as tuberculosis or cholera, and lastly, an infective disease which is not infectious at all, such as rheumatism, cannot be expected from the general public. It is, therefore, essential that the public be instructed in an elementary fashion in regard to some of biological facts in connexion with certain bacteria. It would be well to point out to the man in the street in South Australia that the tubercle bacillus can only infect a healthy person under very special circumstances, that prolonged contact is essential, that predisposing causes play a much greater role than do the bacteria themselves, that the danger of bacilli being carried in dust from a well-managed Home for patients suffering from advanced tuberculosis is nil, inasmuch as all the sputum is collected in properly constructed vessels and destroyed; and lastly, that a single individual spitting about North Terrace is far more dangerous to health than all the patients in the Home. In other words, the danger of this Home to its environments is born of a wrong interpretation of the teachings of science, and is entirely imaginative.

MUTINY IN A LEPER ASYLUM.

According to the "Age" of October 17, 1914, a singular occurrence took place at the Pretoria Leper Asylum on September 15, 1914. It appears that the inmates of the Asylum number about 400, and that the warders are a few native police boys armed with knob-kerries. The Asylum consists of compounds, divided from one another by walls and gates, and separated from the surrounding country in a similar manner. The majority of the patients are natives, and as is usual in a segregation colony of this type, many are extremely active and athletic. A patient began the disturbance by throwing a stone at one of the police boys. This appears to have been a preconcerted signal for a general assault. At all events, the mass of patients took up the lead of their comrade, and roughly overcoming the police guard, gained the kopjes, yelling as they began a fussilade

with stones on the settlement below. For a time the battle went in favour of the patients, who attacked and routed the reinforced police, and then turned their attention to the establishment itself, which they attempted to wreck by random stone shots. The electric lights were smashed, and as night had by then descended, the condition was not only serious, but was extremely weird. At ten in the evening a further detachment of police arrived, and from that time onwards the "enemy" had an uncomfortable time, until at last was forced to submission. Five policemen were injured and seven lepers. One of the latter bore a severe wound from the fray. Twenty-six lepers were arrested, including the alleged ring-leaders. It is satisfactory to note that a mutiny in a leper settlement is an extremely rare occurrence, and that, as a rule, the patients recognize that enforced segregation, while hard to bear by the individuals, is an essential measure adopted in the interests of the population as a whole, and that everything is done by those in charge to render life in the settlements as little hard as possible.

Reviews.

MEDICAL ELECTRICITY.

Those who have used the previous editions of this work will recognize that Dr. Lewis Jones has from beginning to end thoroughly revised it so as to present his subject in a thoroughly up-to-date manner(1). While he describes all that is perhaps absolutely needful for understanding the medical application of electricity, he wisely gives references to such works as he considers suitable for study or consultation by those who wish to make themselves more conversant with the theory of electricity, the construction of electrical apparatus, and other important cognate matters. The sound common sense of the author has always been evident to those who have known the earlier treatises by him, and is apparent in the following extract from the preface to this edition:—"Whereas in the past there has been much uncertainty as to the modes of action of electricity on the body we may now take our stand upon a firmer foundation, and may recognise that electrical applications act either by the chemical (ionic) effects which they produce, or by their thermal effects."

The clear crisp style of the author make it easy to follow his descriptions. The practical and cautious way in which he handles the topic of electricity in general diseases might be taken as a pattern by other authors writing on the subject.

The text is well assisted by illustrations simple and sufficient in number for the purpose aimed at. In short, this edition fully sustains the reputation of the author, and is heartily recommended.

Personal.

Dr. Falkner J. Blaxland has removed from the Coast Hospital to "Karlite," Gladesville, New South Wales.

Dr. H. Graves Bennetts has resumed practice at 151 Macquarie Street, Sydney.

According to the "Daily Telegraph" of October 22, 1914, Dr. Cosmo Fowler, of Summer Hill, New South Wales, who has been a resident doctor at Westminster Hospital, London, and the Naval Hospital at Chatham for about twelve months, has been sent to the front as a surgeon in the Royal Army Medical Corps.

Dr. J. M. Hope, of Ponsonby, New Zealand, was a passenger from San Francisco by the "Maitai," which arrived at Wellington on October 15, 1914. Dr. Hope has been on a visit to the Old Country and America.

Dr. J. E. F. Deaken has entered into partnership with Dr. John Holland, at Hay Street West, Perth, Western Australia.

Dr. H. Hardwick Smith has resigned his position as medical superintendent of the Wellington Hospital, New Zealand.

By the death of Mr. Westmore G. Stephens, the Committee of the Melbourne Hospital has sustained a severe loss.

Vital Statistics.

SOUTH AUSTRALIA.

The vital statistics for South Australia for the month of September, 1914, have been published in the South Australian Government Gazette, dated October 15, 1914. The estimated population of the State is given at 440,047. 1,062 births were registered during the month, which is an increase of 111 on the average number registered during September of the previous five years. The birth-rate was therefore 2.41 per 1000 of population. The number of deaths from all causes was 365, which gives a death-rate of 0.83 per 1000 of population. This is equivalent to an annual rate of 9.96. Fourteen of the 365 deaths were due to epidemic diseases, 75 to general diseases, 188 to local diseases, 29 to senility, 27 to external causes (violence, etc.), and 28 to developmental diseases and diseases peculiar to infancy. Of the first class, 4 deaths were due to pertusis, 4 to influenza, and 6 to diphtheria. Among those of the second group, 25 were due to tuberculosis and 38 to malignant disease. Under the third group organic diseases of the heart caused 46 deaths, pneumonia 29, bronchitis 16, apoplexy 14, and Bright's disease 12. Five deaths were registered as having been due to puerperal causes.

The returns for the city of Adelaide for the month of September show a birth-rate of 2.39, and a death-rate of 2.09 per 1000 of population. Ninety deaths in all were recorded, of which 46 were due to local diseases, including 12 from pneumonia, and 10 from diseases of the heart; 25 from general diseases, including 12 from malignant disease, and 9 from pulmonary tuberculosis, 7 from external causes, 6 from senility, 3 from diphtheria, and 1 each from influenza, malformations and premature birth.

The figures given in regard to the births and deaths registered in Adelaide, exclusive of deaths in public institutions of persons not usually resident in the city, are as follows:—Births, 103; deaths, 55; which is equal to a death-rate or 1.2.

The returns for the 23 corporate towns for the quarter ending September 30, 1914, are as follows:—

Corporate Towns.	Population January 1, 1914.	Registered during Quarter.			The Deaths Registered in the Quarter include Deaths from—						
		Births.	Deaths. Total.	Deaths. Under 1 Year.	Diphtheria and Croup.	Whooping Cough.	Enteric Fever.	Diarrhœa and Dysentery.	Diseases of Respiratory System.	Tuberculosis of Lungs.	Diseases of Circulatory System.
Adelaide	43,133	303	284	29	7	—	—	4	24	33	39
Hindmarsh	11,698	78	17	2	—	—	—	—	4	2	3
Thebarton	9,657	101	34	5	—	1	—	—	3	1	7
Pt. Adelaide	25,093	265	55	20	—	1	—	—	6	2	6
Glenelg ..	5,095	41	16	3	1	—	—	—	2	1	1
Brighton ..	1,309	7	—	—	—	—	—	—	—	—	—
Unley	25,317	173	75	8	1	—	—	1	5	5	11
St. Peters	9,473	62	22	2	—	—	—	1	3	2	1
Kensington & Norwood	14,255	113	52	5	—	1	—	2	6	5	4
Gawler	1,706	15	4	1	—	1	—	—	—	—	1
Kapunda ..	1,647	30	8	2	—	—	—	—	2	—	—
Burra	1,685	33	6	—	—	—	—	—	—	—	2
Clare	906	19	2	—	—	—	—	—	—	—	—
Jamestown .	1,505	25	8	—	—	—	—	—	—	1	—
Pt. Augusta	802	17	3	2	—	—	—	—	—	—	2
Port Pirie	9,770	106	45	17	—	—	1	5	7	4	—
Kadina	1,885	51	9	3	2	—	—	—	1	2	—
Moonta	1,310	24	11	1	—	—	—	—	2	1	2
Wallaroo	3,201	32	16	3	—	—	—	—	3	—	2
Goolwa	607	5	3	—	—	—	—	—	—	1	1
Strathalbyn	1,012	16	4	2	—	—	—	—	1	—	1
Mt. Gambier	3,439	40	14	3	—	—	—	—	2	3	4
Petersburg	2,364	20	5	2	—	—	—	—	—	—	—

(1) Medical Electricity: A practical handbook for students and practitioners. By H. Lewis Jones, M.A., M.D., F.R.C.P.; 6th edition, 1913; London, H. K. Lewis. pp. 550, with illustrated, 8vo. Price, 12s. 6d.

Abstracts from Current Medical Literature.

THERAPEUTICS.

(170) Treatment of Obesity.

Robert Saundby (Med. Press, July 29) divides sufferers from obesity into two classes, the plethoric and the anæmic. Those of the plethoric type have excessive appetite, usually enjoy good health, and are often active and athletic. This condition is hereditary in two-thirds of the cases, and is often associated with a family history of gout, renal colic or gall stones. After middle age such disorders as gout, Bright's disease, or glycosuria manifest themselves. The anæmic type is more common in women than men, and the patients appear ill. They are small eaters, pale, flabby, and disinclined for exertion, and often suffer from dyspepsia, constipation, catarrhs, etc. The treatment of plethoric obesity consists in checking the exaggeration of normal metabolism, especially the consumption of carbohydrates. A sample diet is given which excludes sugar, milk, cream and alcohol, restricts fluids, fats, bread, and other starchy foods, and allows green vegetables and fruit in plentiful quantities. The anæmic type is more difficult to treat. It probably depends largely upon retention of chlorides, with a consequent hydration of tissues, resembling the absorption of water by gelatine. This process is aggravated by such salts as the chlorides of sodium, potassium, or ammonium, hindered by acetates, tartrates (e.g. wines). The methods of treatment devised by Schrott, Galisch and Karell are described, and the thyroid treatment is also dealt with. The chief indications are the restriction of liquids in the diet, the withdrawal of salt, the limitation of food in general, especially as regards fats and proteins, supplemented by such general measures as fresh air, massage, faradism, and careful attention to complications.

(171) Formalin Spray for Diphtheria Carriers.

H. R. Miller (Med. Record, July 25, 1914) reports excellent results from the use of a formalin spray in diphtheria carriers. The strength of formalin used is from ¼% to 1% of the 40% formaldehyde solution. In one case positive cultures of the diphtheria bacillus had been obtained for three and a half weeks in spite of treatment with iodine, peroxide of hydrogen, bichloride of mercury and cultures of staphylococcus aureus. Treatment for two days with a ¼% formalin spray resulted in negative cultures. Cultures made five days after the first negative culture remained negative.

(172) Bacillary Dysentery.

A medical correspondent from Vera Cruz (Med. Record, July 25, 1914) reports failures from the use of opium and ipecacuanha, and also of antidysenteric serum in the treatment of bacillary dysentery. Saline treatment gave good results. The patient was given absolute rest, liquid diet, and daily enema of corn starch, and sulphate of magnesium by mouth in 20 c.cm. doses of a saturated solution every four hours, followed in one hour by 16 minims of aromatic sulphuric acid. The stools at first increased, then diminished in number, and the pain, bleeding and sloughing became less. With improvement the sulphate of magnesium is gradually decreased, and bismuth nitrate and salol given, with occasional purgatives and gradual increase in diet. The disease and convalescence occupy two to four weeks.

(173) Pituitary Extract.

C. L. Nichols discusses the pharmacological action and therapeutic uses of extract of the pituitary gland ("Therapeutic Gaz.," July, 1914). The majority of the extracts sold consists of sterile solutions of the posterior lobe of the pituitary body of the ox. The dose of these extracts for hypodermic medication is 15 drops. Pituitary extract causes a rise of blood pressure resulting from a constriction of the peripheral vessels. The blood vessels of the kidney are, however, dilated with the result that the excretion of urine is increased. The contraction of the cardiac muscle is increased in force and frequency. The muscular fibres of the bladder, stomach and intestines are stimulated. Pituitary extract is further said to be an efficient galactagogue. The effect on the uterine muscle is very marked. This is especially noticeable in the second stage of labour, and it is in this connexion that its chief therapeutic uses are made. The interval between the uterine contraction is shortened, the intra-uterine pressure is increased, and the expulsive power markedly enhanced. It is in the author's opinion of great value in cases of uterine inertia. It is also recommended in the treatment of incomplete abortion. In cases of subinvolution of the uterus, 10 drops of the extract given four times a week for several weeks has yielded extremely good results in his hands. In the shock following prolonged operation, when the pulse is rapid and weak, 15 drops of the extract given four times with intervals of three hours has been found a very good procedure. In the last place, Nichols states that apparent cures have been obtained by the daily injection of from 15 to 30 drops in cases of osteomalacia. Caution is necessary in the case of old persons. He states that pituitary extract is contra-indicated in nephritis, in contracted pelvis, in myocarditis, in arterio-sclerosis and in threatened rupture of the uterus. He does not think that these need be regarded as absolute contra-indications, and states that excellent results have been obtained in some of the cases mentioned. He claims that the use of the extract renders the application of forceps in labour unnecessary in a large number of cases. The uterus does not relax after the administration of the extract.

(174) The Pharmacology of the Internal Secretions.

In order to ascertain the pharmacological actions of the various internal secretions, I. Ott and J. C. Scott ("Therap. Gaz.," August, 1914) have constructed a copper oncometer to enclose the pancreas, with an opening for the arteries and veins and a rubber tube attachment leading to a piston recorder. The oncometer was inserted into the abdominal cavity of cats, under ether anæsthesia, and left in situ until the shock of traumatism had passed off. The variations in the volume of the pancreas were then recorded, after extract of glands were injected. Pituitrin or hypophysin caused a decrease in volume after three minutes. The blood pressure fell at first, but rose subsequently, and the pulse-rate was temporarily slowed, and then returned to normal. Adrenalin (0.06 c.cm.) first decreased the volume and then increased it. The blood pressure was increased and the pulse-rate accelerated. An infusion of pineal gland (0.06 gram) increased the volume of the pancreas. An infusion of thyroid gland (0.06 gram) produced a temporary decrease in volume, followed by an increase. Iodothyrin (0.06 gram) also effected an increase of volume, and at the same time lowered the blood pressure at first, and later heightened it. Thymus gland (0.15 gram) and corpus luteum increased the volume to a very slight extent. Parathyroid, secretin, mammary extract, extract of renal cortex and extract of tonsil all caused a well marked increase in volume of the pancreas. Extract of spleen, prostate and testis had no effect on the volume.

(175) Treatment of Cerebro-spinal Syphilis.

C. W. Jefferson ("Therap. Gaz.," August, 1914) records his favourable experience of Swift and Ellis's method of treating syphilis of the central nervous system by the intra-thecal injection of salvarsanized serum. The method adopted was as follows: One hour after an intravenous injection of salvarsan, 40 c.cm. of blood is withdrawn and placed on ice for 24 hours. The serum, after separation, is then centrifugalized and 12 c.cm. is mixed with 18 c.cm. of physiological saline fluid; the mixture is then heated for 30 minutes to 56° C. Lumbar puncture is then performed; 25 to 30 c.cm. of cerebro-spinal fluid is drawn off and 30 c.cm. of the salvarsanized serum is allowed to run into the canal by gravity. The author records the excellent symptomatic result obtained by him in a case of locomotor ataxy.

(176) Pneumosan in Phthisis.

A. E. Carver (Lancet, Aug. 8, 1914) reports good results from the use of pneumosan in 103 cases of pulmonary tuberculosis. Some of the patients included were in the acute stage of the disease in which tuberculin was contra-indicated; some had failed to make satisfactory progress under tuberculin treatment, and some had

not been treated before. The stage of disease varied from early to very advanced forms. The injections were given intra-muscularly, in each deltoid alternately. The initial dose of 0.25 c.cm. was gradually increased to 1 c.cm., and the injections were given twice a week, or at shorter intervals. Pain was caused by a too rapid injection of the fluid, and occurred at times during the remainder of the day, but no local reaction was observed. General febrile reactions were fairly common, but the subjective symptoms were less marked than in tuberculin reactions. The improvement was shown first in a fall of temperature, a decrease in cough, an increase in weight and energy, and in general well being, and later in a diminution of the physical signs. A case was classed as "disease arrested" only when all symptoms had ceased, and physical examination showed no signs of activity. Patients were kept under periodical observation after the conclusion of the treatment. The author lays stress on the lack of a certain diagnostic sign in the earliest stages, when he considers a course of treatment with pneumosan would be entirely efficacious. He does not regard its action as specific, but as tonic and alterative, and he knows of no better palliative in advanced cases.

UROLOGY.

(177) The Surgical Treatment of Hypospadias.

Tousson (Zeitschr. f. Urologie, June, 1914) has come to the conclusion that of all the methods of treating hypospadias, that described by Nové-Josserand, of tunnelization, and that described by Duplay and Marion, of plastic repair by means of skin flaps are the most useful. Both are freely employed. In regard to technical details, the following points should be borne in mind. The operation should be performed in two stages: (1) straightening of the penis. While the defective curve of the organ is being remedied, the deformity of the glands is dealt with by means of the excision of a wedge-shaped portion of the corpus cavernosum, immediately behind the sulcus coronarius. The scar of this operation must be allowed to heal firmly, and to become sufficiently strong and pliable to resist the effect of the second stage operation. This usually takes from three to six months. (2) The repair of the hypospadiac defect is carried out by means of an auto-plastic operation, Duplay's skin flaps being made use of. The skin flaps should be as thick as possible, and should be fashioned in such a manner that the lines of the sutures of the urethral flap and of the covering skin flap do not lie over one another. At the same time, perineal urethrostomy is performed. (3) The final stage consists in the closure of the perineal fistula.

(178) Nephrectomy for Renal Tuberculosis.

Frank Kidd (Zeitschr. f. Urologie, June, 1914) makes a practical suggestion in the surgical treatment of cases of renal tuberculosis, in which it is impossible to pass a ureteral catheter on account of the contracted condition of the bladder. He believes that it is possible to determine with a considerable degree of probability the condition of the kidney from the condition of the ureter. If the ureter is not thickened, which he determines by palpation, he assumes that the corresponding kidney is healthy. Having determined which kidney is healthy, he proceeds to make an inguinal incision, and through this incision reaches the ureter for the purpose of catheterization. He has carried this procedure out in six patients with satisfactory results. He also recommends a method for obtaining healing by first intention after nephrectomy performed for renal tuberculosis. This method is further recommended for the purpose of preventing the formation of fistulæ. He removes the kidney together with its adipose tissue and capsule, and with the peri-renal fascia. These tissues are frequently infected from the kidney. The peri-renal fascia is reached by Mayo's incision. The facia is first freed from the lumbar muscles until the vertebræ are exposed; this is said to be easily performed. In the next place the fascia is dissected from the peritoneum in front as high as the hilus of the kidney.

(179) Horse-shoe Kidney.

Brongersma (Zeitschr. f. Urologie, June, 1914) records a case of horse-shoe kidney treated by Rovsing's operation. The patient had suffered for 20 years from pains and attacks of colic. Six years previously she was operated on for an alleged renal calculus, but no stone was found. A horse-shoe kidney was discovered at this operation. She suffered subsequently from frequent left renal colic, associated with collapse and fever. Brongersma was able to determine the existence of a pyelitis on both sides by means of ureteral catheterization. This condition was treated by washing out the pelvis of the kidneys. All signs of pyelitis cleared up. Since the pain and collapse continued, the author undertook the division of the transverse bridge of the kidneys. In the performance of this operation pyelography proved of the greatest value. By its means it was possible to determine the exact situation of the bridge. A longitudinal incision was made through the rectus muscle, the peritoneal cavity was opened, and the bridge divided between two ligatures. The wound was completely closed, and healing took place without incident. The attacks of pain and collapse have not returned since the operation. The author refers to a similar case dealt with in the same manner by him a year previously.

(180) Hyperalgesia and Herpes in Renal Diseases.

Adrian (Zeitschr. T. Urologie, June, 1914) calls attention to the frequent clinical association of hyperalgesic zones with renal diseases. Head has pointed out that these zones are frequently met with in various internal diseases. The author considers that they have diagnostic importance. The presence of these hyperalgesic zones is determined by means of the head of a pin and of a test-tube containing warm water. Head's renal zone corresponds to the area of the X and XI lumbar and I lumbar segments. The X dorsal segment supplies the area extended from just below the umbilicus to the 1st and 2nd lumbar vertebræ. This corresponds most closely to the renal area. In close connexion with this hyperalgesia is another interesting manifestation. Herpes zoster is noted in the same zones in renal colic and other affections of the kidneys. This occurrence has been recorded on numerous occasions. Adrian cites a typical case. He explains the occurrence of the herpes and hyperalgesia on the assumption of a stimulation of the corresponding intervertebral ganglia and of the corresponding spinal segments, provided by a reflex arising in the kidney.

(181) Reflux of Urine after Nephrectomy.

Levy-Weissmann (Journ. d'Urologie, April, 1914) discusses the causes of the reflux of urine from the healthy kidney through the ureteral stump on the basis of a case of his own and eight cases reported by various authors. According to Rafin, a sudden contraction of the vesical wall may produce reflux of urine even in a normal ureter. Other observers are of opinion that ulceration and dilatation of the ureteral orifice are necessary for the production of reflux. Both conditions are frequently met with in vesical tuberculosis. The author considers that reflux is caused by a disturbance of the conditions of the ureteral wall. Normally the wall undergoes contractions. This has been demonstrated experimentally. The contractions are said to be in the reverse direction to those of the bladder muscle. He states that the reflux usually occurs from 10 to 12 days after the operation, when the ureteral ligature had been absorbed. The prognosis is good, but cure is slow. Under certain circumstances, uretectomy may be necessary.

(182) Pneumaturia.

Cealic (Journ. d'Urologie, May, 1914) discusses the causes of pneumaturia. In some cases this condition is due to a fistula between the bladder and the intestine. In other cases the gas is developed by the decomposition of urine in the bladder caused by the action of bacteria. This, he states, has frequently been observed in urine containing sugar and blood. It also takes place under certain conditions in normal urine. The bacteria isolated in these cases are bac. coli communis and bac. lactis aerogenes. The author speaks of a case in which he was able to isolate bac. coli communis from the urine. He recommends treating these cases by washing the bladder out, and by giving internal antiseptics.

Contract Practice.

III.

THE AERZTETAG IN MUNICH (Continued).

The Midwives Question.

Dr. Rissmann, of Osnabruck, dealt exhaustively with the question of the relation between midwives and the medical profession. The views put forward were to a large extent directed toward the safeguarding of maternal and infant life, and the pecuniary interest of the profession was scarcely considered at all. The following are the resolutions adopted by the meeting:—

(1) It is still desirable to continue the extension of the professional activity of midwives in Germany along the lines hitherto adopted, and not to start training midwifery nurses.

(2) It is therefore essential to secure in the near future for midwives all those privileges which have already been secured for sick—or infant—nurses (general education, adequate training, proper remuneration, pensions, etc.).

(3) It is advisable that training schools for midwives should be under State control, and that they should have abundant clinical and other material. In this respect the training school for midwives should have attached to it an out-patient department for persons who are subject to the Poor Law Authority ("School for Mothers" and "Infant Consultations"), and an obstetric out-patient department to which a home for mothers should be affiliated. Much more importance should be attached in the future than had been in the past in regard to the training of efficient teachers.

(4) An Imperial Law is urgently needed in Germany for midwives as well as an insurance for expectant mothers.

(5) It is highly desirable that medical practitioners who act as accoucheurs should be acquainted with the text book for midwives, and should call in a midwife at each birth.

(6) A closer association between the teachers in the midwifery training school and general practitioner, and between the teachers and the midwives should be instituted, as is the case in Baden and Mecklenburg. The Medical Officers of Health cannot control the practice of midwives without some assistance.

Military Surgeons on Leave.

For some years past general practitioners have been suffering from the fact that while they were subject to the regulations of the Federation of German Medical Societies in regard to ethical behaviour, and were compelled to submit to the findings of the statutory ethical courts, military surgeons practising among the civil population during leave of absence were exempted from these restricting regulations. Dr. Vogel, of Heppenheim, introduced this subject, and stimulated a very warm debate. Some members took the view that military surgeons could not be subjected to a lay control, and further that the difficulties which had arisen were not very serious. In the end the following resolution was passed:—

> The 40th German Aerztetag instructs its Executive Committee to represent to the present Ministry of War that in future the selection of military surgeons to leave of absence posts shall not be exercised by the military surgeons on duty of the division concerned, but shall be exercised by military surgeons holding leave of absence posts; and that regulations governing the ethical courts of military surgeons (the regulations of April 9, 1901, and the amended regulations of July 15, 1910, for the Prussian army, and the corresponding regulations for Bavaria, Saxony and Württemberg) be amended to provide for special ethical courts for military surgeons holding leave of absence posts. These courts shall be constituted in the various military districts, in a manner similar to the courts for military officers on leave of absence, and for the military surgeons of the Defence Inspection Corps of Berlin.

Fees for Medical Attendance.

When a medical practitioner claims payment for medical attendance in a court of law he is required, in the absence of any special contract, to show that the fees charged are those accepted locally as normal medical fees. Arising out of this precedent scales of fees have been drawn up in the various districts, and these scales have received official recognition. The meeting considered the general results created by these scales of fees, and came to the conclusion that reform was needed in several directions. The Council of the Leipzig League was, therefore, instructed to appoint a "Fee Commission," which should have the duty of supervising the existing scale of medical fees, of insisting on the maintaining of a suitable standard, and when and where possible of substituting for existing scales a new common scale. It is suggested that the Commission shall consist of three medical practitioners resident in one town, and that it should have the right of co-option. The Commission will report annually on its work to the Aerztetag.

Compulsory Insurance of the Middle Class.

The meeting came to the conclusion that it did not lie in the interest of the medical profession for its members to enter into contracts for medical attendance with societies and other bodies representing those classes of society which are not included in the State compulsory insurance regulations. The instances quoted include the middle class, the artizan class, the official class and the industrial class.

The foregoing is an account of the chief matters discussed and decided at the meeting of the Medical Parliament at the end of June. From it will be gathered that unanimity had been attained in the ranks of the profession, that a workable policy had been determined on, and that the profession had excellent prospects of improving the status of its members, and the conditions of contract practice. During the month following the meeting some progress was made in regard to the acceptance of the Berlin agreement in various districts, and on the 24th July the list of warning notices had become distinctly smaller. No information had been published relating to the position in Elbing, which, as already stated, may be regarded as a test case. The sources of information have been closed since that date, and it may be a considerable time before further news can be received. The success of the Leipzig League in the first half of 1914 was so signal, and the determination of the members of the Aerztetag so striking that no doubt exists as to the ultimate issue.

British Medical Association News.

SCIENTIFIC.

A general meeting of the Queensland Branch will be held on Friday, November 6, 1914, at 8.15 p.m., at the B.M.A. Building, Adelaide Street.

Agenda.

Exhibition of Cases and Specimens:—

Dr. Mathewson—

1. Notes of a case of Peritonsillar Abscess.
2. Notes on cases of Thread Worms in Children.

Papers.

Dr. Brockway—"Administration of Dental Anæsthesia."

Dr. Sidney Page—"A few remarks on Vaccine Therapy."

Naval and Military News.

The following is a list of medical members of the University of Sydney who have volunteered for active service in the Australian Imperial Forces and the Australian Military Expedition. Those indicated are members of the British Medical Association:—Dr. A. J. Aspinall (B.M.A.), Dr. A. D. Barton (B.M.A.), Dr. V. Benjafield (B.M.A.), Dr. A. L. Buchanan (B.M.A.), Dr. H. J. Clayton (B.M.A.), Dr. A. L. Dawson (B.M.A.), Dr. J. E. Donaldson, Dr. L. W. Dunlop (B.M.A.), D. J. W. Farrar, Dr. W. M. A. Fletcher

(B.M.A.), Dr. W. C. Grey (B.M.A.), Dr. L. Herschell Harris (B.M.A.), Dr. W. E. Kay (B.M.A.), Dr. B. C. Kennedy, Dr. D. S. Mackenzie, Dr. F. A. Maguire (B.M.A.), Dr. R. J. Millard (B.M.A.), Dr. J. B. Nash (B.M.A.), Dr. B. J. Newmarch (B.M.A.), Dr. H. H. H. Poate (B.M.A.), Dr. W. H. Read (B.M.A.), Dr. A. W. Scot-Skirving (B.M.A.), Dr. C. Shellshear (B.M.A.), Dr. F. G. N. Stephens (B.M.A.), Dr. E. S. Stokes (B.M.A.), Dr. J. C. Story (B.M.A.), Dr. A. H. Tebbutt (B.M.A.), Dr. C. A. Verge (B.M.A.), Dr. R. A. R. Wallace (B.M.A.), Dr. C. E. Wassell, Dr. H. L. St. V. Welch (B.M.A.), Dr. J. B. St. V. Welch (B.M.A.), Dr. C. H. Wesley.

APPOINTMENTS.

Army Medical Corps.

To be Major—

Major G. W. Barber, Australian Army Medical Corps. Dated 2nd October, 1914.

To be Captains—

Captain J. A. O'Brien, Australian Army Medical Corps. Dated 21st September, 1914.

Dr. Gerald Eugene MacDonald Stuart. Dated 2nd October, 1914.

MEDICAL OFFICERS ON ACTIVE SERVICE.

The following is a complete list of the Medical Service attached to the Second and Third Australian Expeditionary Forces:—

Regimental.

Unit.	District allotted.	Nominations.	Military District.
5th Light Horse	1st	Captain J. E. Dods	1st
6th Light Horse	2nd	Captain C. A. Verge	2nd
7th Light Horse	2nd	Captain R. Flecker	2nd
8th Light Horse	3rd	Captain S. J. Campbell	3rd
9th Light Horse	4th	Major F. D. Jermyn	4th
10th Light Horse	5th	Captain Henshley	
13th Infantry	2nd	Captain C. Shellshear	2nd
14th Infantry	3rd	Captain H. G. Loughran	3rd
15th Infantry	1st	Captain J. E. F. Luther	1st
16th Infantry	5th	Captain R. S. McGregor	5th

2nd Light Horse Field Ambulance.

Position.	Nominations.	Military District.
O.C., Lieut-Colonel (1)	Lt-Col J. L. Cuppsidge, V.D.	1st
Major (1)	Major D. G. Croll	1st
Captains (4)	Captain W. A. Fraser	1st
	Capt. L. G. A. MacDonnell	1st
	Captain C. F. Fitcher	4th
	Captain J. D. Buchanan	1st

3rd Light Horse Field Ambulance.

Position.	Nominations.	Military District.
O.C., Lieut-Colonel (1)	Lieut-Colonel R. M. Downes	3rd
Major (1)	Captain E. R. White	3rd
Captains (4)	Captain J. H. Anderson	3rd
	Captain M. W. Cave	3rd
	Captain G. E. M. Stuart	3rd
	Captain G. McK. Aberdeen	3rd

4th Field Ambulance.

Position.	Nominations.	Military District.
O.C., Lieut-Colonel (1)	Lt.-Col. J. L. Beeston, V.D.	2nd
Majors (2)	Major J. E. F. Stewart	5th
	Major J. L. Strangman	4th
Captains (6)	Captain A. L. Meikle	4th
	Captain A. L. Dawson	2nd
	Captain J. P. Kenny	5th
	Captain H. L. St. V. Welch	2nd
	Captain L. W. Jeffries	4th
	Captain C. M. Finn	5th
Quartermaster (1)		

1st Australian General Hospital.

Position.	Nominations.	Military District.
O.C., Lieut-Colonel (1)	Lt.-Col. W. Ramsay Smith	4th
Lieut-Coonels (2)	Lieut-Colonel G. A. Syme	3rd
	Lieut-Col. H. C. Maudsley	3rd
Majors (6)	Major R. Macdonald	1st
	Major E. S. Jackson	1st
	Major J. B. Maclean	1st
	Major D. P. Dunhill	3rd
	Major W. E. Summons	3rd
	Major S. Argyle*	3rd
Captains (11)	Major J. W. Barrett†	3rd
	Captain S. Kay	1st
	Captain H. H. B. Follit	1st
	Captain B. M. Sutherland	3rd
	Captain H. H. Turnbull	3rd
	Captain H. V. Foxton	1st
	Captain J. T. Tait	1st
	Captain A. Alcorn	1st
	Captain R. F. Watson	3rd
	Captain M. B. Johnson	3rd
	Captain H. F. Plant	1st
	Captain C. Morlet	3rd
Quartermaster (1)	Captain W. R. E. Sabine	1st

* Supernumery (Specialist).

† Supernumerary without pay.

2nd Australian General Hospital.

Position.	Nominations.	Military District.
O.C., Lieut-Colonel (1)	Lieut-Colonel T. M. Martin	2nd
Lieut-Colonels (2)	Lieut-Col. J. B. Nash, V.D.	2nd
	Lt.-Col. J. W. Springthorpe	3rd
Majors (5)	Major W. H. Read	2nd
	Major W. C. Grey	2nd
	Major P. A. Carter	2nd
	Major J. M. Y. Stewart	2nd
	Major A. W. Campbell	2nd
Captains (12)	Captain J. C. Storey	2nd
	Captain H. J. Clayton	2nd
	Captain J. Reiach	2nd
	Captain V. Benjafield	2nd
	Captain C. V. Howse	2nd
	Captain D. M. A. Fletcher	2nd
	Captain D. S. Mackenzie	2nd
	Captain A. D. Barton	2nd
	Captain C. Ross	2nd
	Captain W. W. McLaren	3rd
	Captain D. M. Embleton	3rd
	Captain B. C. Kennedy	2nd
Quartermaster (1)	Hon. Captain C. Gray	2nd

1st Australian Clearing Hospital.

Position.	Nominations.	Military District.
O.C., Lieut-Colonel (1)	Lieut-Colonel W. W. Giblin	6th
Majors (2)	Major S. J. Richards	1st
	Major J. Gordon	3rd
Captains (4)	Captain J. A. O'Brien	3rd
	Captain R. D. Campbell	6th
	Captain C. Mattei	6th
	Captain C. N. Atkins	6th
Quartermaster (1)	Hon. Lieut. E. T. Boddam	6th

1st Australian Stationary Hospital.

Position.	Nominations.	Military District.
O.C., Lieut-Colonel (1)	Lt.-Col. H. W. Bryant, V.D.	3rd
Majors (2)	Major H. A. Powell	4th
	Major T. G. Wilson*	4th
Captains (4)	Major H. S. Newlands*	4th
	Capt & Hon. Maj. J. Corbin	4th
	Captain F. W. LeMessurier	4th
	Captain J. S. Verco	4th
Quartermaster (1)	Hon. Capt. R. A. Lowry	3rd

* Pay of Captain.

2nd Australian Stationary Hospital.

Position.	Nominations.	Military District.
O.C., Lieut-Colonel (1)	Lt.-Col. A. T. White, V.D.	5th
Majors (2)	Major G. W. Barber	5th
	Major B. T. Zwar	3rd
Captains (4)	Captain A. R. Haynes	5th
	Captain V. C. Stacy	5th
	Captain J. E. F. Deakin	5th
	Captain W. C. Sawers	5th
Quartermaster (1)	Captain A. E. Clarke	5th

University Intelligence.

MELBOURNE UNIVERSITY.

The Melbourne University Council considered on October 20, 1914, a scheme for the removal of the University Medical School from its present situation to a site within the ground of the Melbourne Hospital, facing Lonsdale Street and Russell Street (see "Medical Journal of Australia," October 24, 1914, page 404). Dr. J. W. Barrett suggested that the discussion be postponed to the next meeting of the Council, and that Professor Berry be invited to attend and to explain his proposals. The Vice-Chancellor regarded the proposal as extremely daring, inasmuch as it was based on the proposition that the University should be taken to the Hospital. He imagined that everyone would agree on the plan of binding the University and the Hospital more closely together. Professor Masson was afraid that duplication would be necessary at all events as far as the departments of bacteriology and biochemistry were concerned. It was essential that these two departments should exist in a school of applied science. Dr. T. F. Bride regarded the present time as most inopportune for the consideration of such a scheme. Professor Sir Harry Allen spoke in favour of this scheme, and pointed out that the only other method of bringing the medical school and the hospital close together would be by the purchase of a site near the hospital. This could not be carried out for less than £60,000. It was eventually resolved that the matter be postponed for discussion at the next meeting of the Council, that Professor Barry be asked to attend, and that it be understood that this action on the part of the Council should not be interpreted as an indication of any intention that the Council would relinquish its own building scheme.

The following is an abstract of Professor Berry's scheme:

Thesis.

The practice in all the world's best schools of medicine of placing a medical school alongside a hospital forms an efficient recognition of the fact that medicine cannot be scientifically carried out without the close and active co-operation of the basal medical sciences with the arts and practices of the clinician.

Proposal.

Re-build the Medical School of the University of Melbourne within the grounds of the Melbourne Hospital, at the corner of Lonsdale Street and Russell Street.

Details of Building.

A six-storied building in brick, comformable architecturally and structurally with the existing Melbourne Hospital.

Height, 85 feet. Main wing, 235 feet by 50 feet. North wing, 115 feet by 50 feet. South wing, 115 feet by 60 feet. Floor space, 120,000 square feet, or double that of the existing school.

Accommodation.

A refectory in basement, with full accommodation for Anatomy, Physiology, Bacteriology, Pathology, Clinical research, Medical Society of Victoria, all medical libraries, and all clinical subjects of the curriculum.

Effects on University.

Evacuation of Medical School allows every building therein to be devoted to the purposes of the Faculty of Science, and also provides for the Faculty of Agriculture. The completion of the south frontage of the Old Quadrangle provides ample accommodation for the Faculty of Law and Administration. The Faculty of Arts may be accommodated in a combination of old and new buildings along Madeline Street (Plan No. 1), or may be housed, as proposed by the University Architect, to the south of the Wilson Hall (Plan No. 2).

Advantages of the Complete Scheme to the University.

(1) Its medical school is for ever alongside a hospital.
(2) The faculties of Science, Agriculture, Law, Arts and Medicine have their available accommodation doubled. Administration, and the Departments of Biology and Metallurgy also gain considerable extensions.
(3) All buildings are finished.
(4) Ample room is provided for future extensions.
(5) By Plan No. 1 the State acquires two noble buildings in the south elevation of the Old Quadrangle and the Madeline Street Arts School; the latter is also placed in close contact with the practical side of education, and there is thus an association of State and University educational activities.
(6) By placing its most important buildings where they can be seen, the University gains the advantage of publicity.

Difficulties in the way of the Medical Part of the Scheme.

(1) The existing Medical School and the Medical Society of Victoria cannot be transferred without the consent of Government.
(2) Medical School buildings cannot be placed within the grounds of the Melbourne Hospital without the consent of the Governors of that institution.
(3) Future extensions of both Medical School and Hospital are rendered difficult.

Advantages of the Proposal.

(1) The State of Victoria gains the inestimable advantage of School and Hospital working together for the eradication of disease, and thus the advantage to the suffering sick is incalculable.
(2) In times of national stress or emergency from accident or disease the whole medical wealth of the University and Hospital will always be at the disposal of Government and State.
(3) With the "complete school" all unite to relieve suffering and to benefit the man and womanhood of the State.

(4) Every medical professor is in immediate contact with the clinical problems of the day, to the mutual advantage of both himself and the clinician.

(5) The teaching and practising clinicians of two hospitals can avail themselves, for the study and treatment of disease, of the wealth of material presently stored in the University and now useless on account of its remoteness.

(6) The original investigation of disease and clinical and scientific medical research can be carried on to the best advantage.

(7) The medical libraries of Victoria are concentrated on the one spot and the most up-to-date knowledge is instantly available for the treatment of disease.

(8) The close proximity of these libraries to the Public Library gives still further opportunity for extended research, and abolishes all necessity for duplication of journals.

(9) Greatly increased facilities are afforded the University for obtaining scientific assistants in the laboratories, and these are eventually passed on to the public with a greatly improved scientific and clinical training.

(10) The proximity of School and Hospital diminishes the daily cost of working expenses, economises the cost of scientific and medical journals by the proximity of both to the Public Library, and saves the time of patient, staff and student.

(11) Hospital directors of clinical research can place their scholars instantaneously to the best advantage by diverting them to the laboratories where their researches may be best prosecuted.

(12) Theory and practice are for all time in contact, to the manifest advantage of State, University, Hospital and School.

Finance.

The financial cost of the entire proposal, University and Hospital, is estimated at £160,000.

Plan No. 1.

(A) New Arts Buildings along Madeline Street	£30,000
(B) Reconstruction of Medical School for Science, Chemistry included	15,000
(C) Completion of South Frontage of Old Quadrangle	35,000
(D) Russell Street Medical School—	
Buildings	60,000
Fittings	20,000
Total	£160,000

Plan No. 2.

(A) New Arts Building to South of Wilson Hall	£45,000
(B) Reconstruction of Medical School for Science, excluding Chemistry	5,000
(C) Completion of South Frontage of Old Quadrangle—Architect's estimate..	30,000
(D) Russell Street Medical School—	
Buildings	60,000
Fittings	20,000
Total	£160,000

As against this the University of Melbourne has already informed the Government of Victoria that it requires for building purposes £128,000, part of which necessitates the extension of the Medical School on its present site, thereby perpetuating every evil which it is the object of the present proposal to remove.

Professor Berry submitted to the meeting of the Council of the University the following motion:—

> That the faculty advise the Council that at all time the faculty has been anxious that a closer relation should be established between the science department of the Medical School and the Melbourne Hospital. That to this end the faculty has repeatedly advocated the rebuilding of the Melbourne Hospital on the site south of the Medical School, within the University reserve, or elsewhere in close relation to the University. That the Council has taken similar action from time to time. That great advantage has come in the past from the Professor of Pathology acting as pathologist to the Melbourne Hospital. That advantage would accrue if the relations of the department of pathology with clinical work were made even closer, and if the departments of anatomy and physiology were also brought into relation with clinical teaching.
>
> That as the Melbourne Hospital is now being rebuilt on the same site, the faculty is anxious to ascertain how its old aims can best be achieved.
>
> That the question is complicated by the recognition of three general hospitals as clinical schools, and the faculty desires in its preparation of any scheme to work for the advantage of all the recognized clinical schools. If money were available for the purchase of a sufficient area near the Melbourne Hospital, and for the erection of suitable buildings, approximately equal to those now devoted to purposes of the Medical School, with room for expansion, the faculty would not hesitate to recommend removal, the present buildings being transferred to other branches of science. Large expenditure in new buildings would then be unnecessary. The faculty is opposed to removal of any one department, being convinced that anatomy, physiology and pathology should be housed in close relations to one another.
>
> The question at issue must be viewed from many standpoints. For the present, the faculty deems it best simply to lay the matter in its essence before the Council.

On May 25, 1914, the following resolution was passed by the Clinical Staff of the Melbourne Hospital:—

> "That this staff approves of the moving of the Melbourne Medical School from the University to a position on or in the immediate neighbourhood of the present Melbourne Hospital site."

On July 14, 1914, the Clinical Staff of the St. Vincent's Hospital resolved:—

> "That in the opinion of the Clinical Staff of the St. Vincent's Hospital, the interests of medical education would be advanced by the rebuilding of the Medical School on a site nearer to the existing clinical hospitals. The staff, however, does not favour the erection of the Medical School within the grounds of the Melbourne Hospital."

We are informed that the staff of the Alfred Hospital has expressed its general approval of the idea underlying Professor Berry's scheme.

MELBOURNE UNIVERSITY.

Professor T. H. Laby, M.A., of the Victoria University College, New Zealand, has been appointed Professor of Natural Philosophy in the University of Melbourne. Professor Laby is a graduate of Emmanuel College, and held several exhibitions. He was President of his section at the 1911 meeting of the Australian Association for the Advancement of Science.

UNIVERSITY OF QUEENSLAND.

At a meeting of the Senate of the Queensland University, held on October 14, 1914, preliminary steps were taken in connexion with the election of the Rhodes scholar for 1914. The Selection Committee will consist of his Excellency the Governor (Chairman), the Chief Justice of Queensland, the President of the Board of Faculties, Sir David Hardie, Mr. A. M. Hertzberg, and Mr. J. J. Walsh. Applications should be forwarded to the University before December 1, 1914.

In accordance with the recommendations submitted by the Select Committee, appointed for the purpose of bringing the University into closer touch with the people of Queensland, it is proposed that articles and paragraphs relating to the work of the University should be published at regular intervals.

Public Health.

THE HEALTH OF NEW SOUTH WALES.

The following notifications have been received during the fortnight ending October 26, 1914, by the Department of Public Health, New South Wales:—

	Typhoid Fever. Cases.	Deaths.	Scarlet Fever. Cases.	Diphtheria. Cases.	Deaths.	Infantile Paralysis Cases.
Metropolitan Combined Districts	24	2	82	62	—	1
Hunter Riv. Combined Districts	3	—	8	3	—	—
Remainder of State	23	—	37	159	5	—
Total	50	2	127	224	5	1

SMALL-POX IN SYDNEY.

The number of small-pox cases reported to the Department of Public Health, New South Wales, during the week ended October 25, 1914, were:—

	Cases.
City of Sydney and Metropolitan District	9
Moree District (Pallamallawa)	2
Newcastle District (Wallsend)	2
Yass Town and Railway Deviation Works	11
Total	24

HEALTH OF THE METROPOLIS OF SYDNEY.

The mortality return for September, 1914, as supplied by the Government Statistician, shows that 627 deaths occurred in the metropolis of Sydney, including 20 deaths of individuals previously resident outside the metropolis, and deaths classified as taking place in the islands and shipping in the harbour.

Thus, calculating on an estimated population of 725,400, the death-rate for the month was equivalent to an annual death-rate of 10.38 per 1000 of the population.

Deducting the number of deaths of persons non-residents of the metropolis, in the mental hospitals of Leichhardt and Hunter's Hill (Callan Park and Gladesville), and adding the number of deaths of persons resident of the metropolis, occurring at the benevolent asylums, mental hospitals and consumptive sanatoria situated outside the metropolis, the number of deaths was 679, giving a corrected death rate equivalent to 11.2 per 1000.

Among children under one year of age, 92 deaths were recorded for the metropolis.

There were 1800 births during the month, giving the very satisfactory rate of 29.78 per 1000 of the population, being 7 per cent. above the average of the previous five years.

The infantile mortality rate was 51 per 1000 births. The drop in the rate is most satisfactory, being the lowest rate during the year, and 22 per cent. below the average for September of the previous five years.

Notifiable infective diseases were responsible for 19 deaths, of which 6 were due to typhoid fever, 1 to scarlet fever, 2 to whooping cough, 4 to diphtheria, 1 to influenza, and 5 to puerperal septicæmia. Diarrhœal diseases were credited with 14 deaths, 5 of which were under one year of age. Phthisis caused 22 deaths; pneumonia 44; cancer 59; diseases of the heart and blood vessels 92; Bright's disease 41; prematurity 19; senility 41; accident 27.

Compared with the average in September for the previous five years, there were increases in the number of deaths from senility, diseases of the heart, cerebral hæmorrhage, and decreases in notifiable diseases, phthisis, diarrhœa, and enteritis.

The number of deaths from cancer was not materially greater or less than in previous years. 175 cases of scarlet fever, 105 of diphtheria, and 21 of enteric fever, were notified during the month of September.

These figures show an increase on those of the previous month of 17 in the case of scarlet fever, 3 in the case of enteric fever, and a decrease of 22 in the case of diphtheria.

Fifteen (15) cases of phthisis (pulmonary and laryngeal tuberculosis) were notified under the City Council's by-laws, and 7 premises were disinfected by the Council's trained staff, after the death or removal of the patients.

F. M. SUCKLING,
Acting Medical Officer of Health.

October 21, 1914.

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ended October 17, 1914:—

Notifiable Disease.	Cases.
Typhoid Fever	20
Diphtheria	55
Varicella	27
Phthisis	8
Erysipelas	4
Cerebro-spinal Meningitis	3
Scarlet Fever	2
Ankylostomiasis	2
Puerperal Fever	2
Infantile Paralysis	6
Total	129

HEALTH OF VICTORIA.

During the fortnight ended October 13, 1914, the following returns have been received from the Department of Public Health of Victoria:—

	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Pulmonary Tuberculosis.
Whole State—				
Cases	5	146	16	37
Deaths	2	10	1	20
Metropolis—				
Cases	4	65	14	26
Deaths	2	6	—	14

The number of diphtheria and scarlet fever cases notified from the various municipalities for the fortnight ended October 13, 1914, were as follows:—

Municipality.	Diphtheria.	Scarlet Fever.
Bendigo	22	—
South Melbourne	13	6
Echuca	8	—

The decline in cases of diphtheria still continues, as is usual at this time of the year.

The following are the returns of the notifications of infective diseases received during the quarters ending June 30 and September 30, 1914, and for comparison, during the quarter ending September 30, 1913:—

Return for Quarter ended 30th June, 1914.

District.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Pulmonary Tuberculosis.
Metropolitan.	54	683	65	183
Ballarat	12	50	3	18
Bendigo	24	126	3	11
Geelong	15	39	1	3
Rural	192	624	12	75
Whole State.	297	1522	84	290

Return for Quarter ended 30th September, 1914.

Metropolitan.	12	679	104	176
Ballarat	—	39	9	8
Bendigo	4	230	2	8
Geelong	—	24	—	3
Rural	22	574	28	96
Whole State.	38	1546	143	291

Return for Quarter ended 30th September, 1913.

Metropolitan.	28	737	27	210
Ballarat	—	66	—	18
Bendigo	2	203	1	20
Geelong	—	38	1	7
Rural	23	530	8	108
Whole State.	53	1574	37	363

THE INSANE IN VICTORIA.

The Inspector-General of the Insane of Victoria has issued his report for the year 1913. He states that while the number of insane persons registered in the State has increased by 157, the increase of the number of patients in the State hospitals for the insane was only 72. On the 31st December, 1913, there were 571 patients in the hospital at Yarra Bend, 879 at Kew, 322 at Kew Idiot Asylum, 675 at Ararat, 662 at Beechworth, 889 at Sunbury, 627 at Ballarat, 101 at Royal Park, and 295 at Mont Park. 472 patients had been allowed out on trial leave from the

various hospitals for the insane, including 192 from Kew, 105 from Yarra Bend, and 82 from Royal Park. In addition, 138 patients were boarded out from the various hospitals.

A series of tables are given, showing the distribution of the insane in licensed houses, the admission, re-admissions, discharges and deaths in the hospitals for the insane, the duration of disease, the rate of recovery, the probable causes and a variety of other interesting data. During the year, 792 patients were admitted for the first time into the public hospitals for the insane; 66 were admitted for the second or subsequent times; 198 patients were discharged as "recovered"; 85 were said to be "relieved" o
10 to be "not improved"; 393 patients died during the year, while 53 patients escaped, of whom 42 were recaptured. The average number of patients resident in the hospital during the year was 4.983, and the total number under care during this period was 6.312. Of the patients admitted, 126 had already had one attack, 25 had had two attacks, 9 three attacks, and 3, 1, 2, and 1 had had four, five, six, and eight attacks respectively. The number of patients in the hospital on the 31st December had risen from 3.868 in 1891 to 5.631 in 1913.

In regard to the form of mental disease, 1,846 persons were suffering from secondary dementia, 616 from congenital mental deficiency, 492 from primary dementia, 411 from senile dementia, 350 from non-systematized delusional insanity, 253 insanity with epilepsy, 210 systematized delusional insanity, 166 chronic mania, 129 congenital mental deficiency with epilepsy, 122 general paralysis of the insane, 112 recurrent mania, and 101 chronic melancholia. In regard to the probable causes, the Inspector-General attributes the mental disease to hereditary influence in 174 instances, and to intemperance in drink in 139. Of the other probable causes mentioned are congenital defects, venereal disease, senility, sexual intemperance, adverse circumstances, domestic troubles, mental anxiety and love affairs, and religious excitement, as well as parturition, the puerperal state, lactation and the menopause.

The medical superintendents of each of the hospitals for the insane and the licensed houses have published separate reports, in which a considerable amount of highly interesting matter is detailed.

A special report by Dr. Lind from the Pathological Laboratory at Royal Park deals with the investigations of the various diseases under treatment. 226 post-mortem examinations were made during the year. In about 32 per cent. of the cases of idiocy, abnormality of brain architecture caused by developmental defects was found, and in 60 per cent. there were fibrotic syphilitic changes of the different organs. About 18 per cent. of the idiots died of tubercular disease. Five out of 11 patients dead of dementia præcox showed definite syphilitic changes. Great variety of pathological changes of the various organs was found in epileptics. The brain was apparently normal in some of the recent epilepsies of the so-called idiopathic type. The most constant findings in the brains of general paralytics were granules in the calamus scriptorius, thickening of the pia-arachnoid membrane, thickening of the dura mater, adherent pia-arachnoid and general wasting of the brain substance. Atheroma was found in connexion with alcoholic dementia, terminal dementia, and Korssakow's psychosis, as well as with other conditions. Dr. Lind has examined the living blood by Ross's jelly method, but failed to find any foreign organism in the corpuscles from cases of paralytic dementia, dementia præcox, acute melancholia, acute mania, and epilepsy.

Appended to the report are a few excellent illustrations of some of the institutions for the treatment of the insane.

THE HEALTH OF BROKEN HILL.

During the quarter ended September 30, 1914, 340 births (160 males and 180 females) were registered; these numbers are equivalent to a birth-rate of 32.12 per 1000 of population per annum. During the corresponding quarter of last year 361 births were registered, and the birth-rate was equivalent to an annual rate of 41. The number of deaths registered in the district during the quarter amounted to 111 (65 males and 46 females), which is equivalent to an annual rate of 13.45 per 1000 of population, as compared with a total of 159 and an annual rate of 18 per 1000 for the corresponding period in 1913. Thirty-three infants under 12 months of age died, giving a rate of 97 per 1000 births. In the previous September quarter there were 25 deaths and a rate of 69.25 per 1000 births.

In the same period, the following cases of infective diseases were notified:—

Enteric fever, 24; diphtheria, 117; scarlatina, 9. In 1913 (September quarter), 16 cases of enteric fever, 57 of diphtheria, and 1 of scarlatina were notified. Of the above cases, 3 of the enteric fever cases, and 5 of the diphtheria cases died. In the previous September quarter there were three deaths from enteric fever and 17 from diphtheria.

The chief causes of infantile mortality were gastro-intestinal diseases (16) and prematurity (10). Among the causes of death affecting the general population, nephritis occurred in 6 cases, cancer in 5, cardiac affections in 9, pulmonary tuberculosis in 6, and pneumonia in 17. Eight deaths were due to accidents.

Correspondence.

A SWISS FIRM.

Sir,—An impression appears to prevail in some quarters that we are a German house, and as such are no longer able to supply Roche products. Both impressions are quite erroneous, the first no doubt, being due to the fact that we have laboratories and works in Grenzach (Baden). Our head offices and laboratories are, however, at Basle (Switzerland), where we have been established for many years.

With regard to the second point, we are taking steps to announce the fact that we have large reserve stocks, and not only anticipate no difficulty in filling orders, but furthermore, do not propose to increase the prices.

Yours, etc.,

THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LTD.

Idol-lane, London, E.C., Sept. 11, 1914.

Proceedings of Australasian Medical Boards.

VICTORIA.

The following persons have been registered under the provisions of the Medical Act of 1890, Part 1, and the Medical Act, 1906:—

Featherstone, Frank Reginald, Rutherglen, L.R.C.P. et S. (Edin.), L.F.P.S. (Glas.), 1991; L.S.A. (Lond.), 1900.

Lade, Leonard Cyril, Learmonth, M.B., et Ch.B.(Melb.), 1913.

Mitchell, Mary Wilhelmina (née Wylie), Queenscliff, M.B. (Sydney), 1906.

Craig, Robert Fulton, Parkville, M.B. et Ch.B. (Melb.), 1914.

Cranston, George Elliot, East Malvern, M.B. et Ch.B. (Melb.), 1914.

Dunstan, Harold Fleming, Belgrave, M.B. et Ch.B. (Melb.), 1914.

Melville, Alexander Hugh, North Carlton, M.B. et Ch.B. (Melb.), 1914.

Ross-Soden, John Leslie, Toorak, M.B. et Ch.B. (Melb.), 1914.

Uther, Walter Bird, Hawthorn, M.B. et Ch.B. (Melb.), 1914.

Ward, Harold Whitfield, Williamstown, M.B. et Ch.B., (Melb.), 1914.

Wheatland, Frank Travis, East Malvern, M.B. et Ch.B., (Melb.), 1914.

Medical Appointments.

Dr. C. L. Park has been appointed as a Quarantine Officer (General) New South Wales, in place of Dr. H. N. Featonby.

Dr. J. Harris has been appointed Deputy Quarantine Officer at Newcastle, in place of Dr. Booth-Clarkson.

Dr. C. H. Clatworthy has been appointed Quarantine Officer at Gladstone, Queensland, in place of Dr. Taylor.

Dr. Norman Pern has been appointed Medical Officer of Health for the Belfast Shire, Victoria, Dr. W. H. Orchard having resigned.

Dr. Paul Mitchell has been appointed Medical Officer of Health for the Western Riding of the Waranga Shire, Victoria, Dr. N. Wilson having resigned.

Dr. Godby and Dr. McCristal have been appointed resident medical officers at the Adelaide Hospital.

Medical Appointments Vacant

DEPARTMENT OF TRADE AND CUSTOMS.
QUARANTINE SERVICE.

APPLICATIONS are invited for the position of QUARANTINE OFFICER in the Commonwealth Quarantine Service. Applicants must be qualified medical graduates, and must state their age and record of experience.

Salary, £400 per annum.

The position is exempted from the provisions of the Public Service Act or any of its amendments.

Preference will be given, other things being equal, to candidates holding the Diploma of Public Health.

The Successful Applicant will be required to take up duty at Brisbane or such other Station as may be directed.

Applications should be addressed to the Director of Quarantine, 51 Spring Street, Melbourne, and should be lodged on or before October 31st, 1914.

F. G. TUDOR,
Minister for Trade and Customs.

HOSPITAL FOR SICK CHILDREN, BRISBANE.

APPLICATIONS, with copies of testimonials, are invited (up to 3rd November) for the position of TWO RESIDENT MEDICAL OFFICERS to the above Hospital. Salary each £100 (One Hundred Pounds) per annum, with board and lodging. Applicants to state age, previous experience, etc. Knowledge of Bacteriology necessary. Duties to commence at an early date. Applications to the Hon. Secretary, Medical Board, Children's Hospital.

CATHERINE J. FRASER,
Secretary.

Medical Appointments Sought, etc.

LOCUM TENENS.—M.D. desires Engagement. Apply G.P.O., Sydney, N.S.W., Box 2373.

For IMMEDIATE DISPOSAL:—Private Hospital; registered accommodation for 15 patients, well established; healthy district, near railway terminus. Every modern appliance. Full particulars to registered nurses and medical practitioners on application to No. 766, Medical Journal of Australia, B.M.A. Building, 30-34 Elizabeth-street, Sydney.

A LADY, sister of a N.S.W. Doctor, SEEKS ENGAGEMENT with a Practitioner in Sydney or suburbs. Understands book-keeping, sterilizing of instruments, etc. Apply No. 625, "Medical Journal of Australia," B.M.A. Building, 30-34 Elizabeth Street, Sydney.

Diary for the Month.

Nov. 3.—New South Wales Branch B.M.A., Council Meeting.
Nov. 4.—Opthalmological Society of New South Wales.
Nov. 11.—Victorian Branch B.M.A., Monthly Meeting. Last date for nominations for members of Council.
Nov. 11.—Melbourne Paediatric Society.
Nov. 12.—Victorian Branch B.M.A., Council Meeting.
Nov. 13.—New South Wales Branch B.M.A., Clinical Evening.
Nov. 17.—New South Wales Branch B.M.A., Council Meeting.
Nov. 18.—Western Australian Branch B.M.A., Branch Meeting.
Nov. 18.—Victorian Branch, B.M.A., Clinical Meeting.
Nov. 24.—Victorian Branch B.M.A., Eye and Ear Section.
Nov. 24.—New South Wales Branch B.M.A., Committee Meeting.
Nov. 25.—Victorian Branch, B.M.A., Council Meeting.
Nov. 26.—South Australian Branch, B.M.A., General Meeting.
Nov. 27.—Melbourne Hospital Clinical Meeting.

Books Received.

THE BRAIN IN HEALTH AND DISEASE. by Joseph Shaw Bolton, M.D., D.Sc. (Lond.): 1914, London: Edward Arnold, 8vo., pp. 479. Price, 18/- net.

THE VACCINATION QUESTION IN THE LIGHT OF MODERN EXPERIENCE: An appeal for reconsideration. By C. Killick Millard, M.D., D.Sc.: 1914, London: H. K. Lewis. Demi 8vo., pp. 243. Price, 6/- net.

PUBLIC HEALTH LABORATORY WORK, by Henry R. Kenwood, M.B., F.R.S. (Edin.), D.P.H., F.C.S., sixth edition; 1914, London: H. K. Lewis. Demi 8vo., pp. 418. Price, 10/- net.

Important Notices.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec. B.M.A. Building, Adelaide Street, Brisbane).	Brisbane United F.S. Institute. F.S. Lodges at Longreach. F.S. Lodges at Warwick.
WESTERN AUSTRALIA. (Hon. Sec. 230 St. George's Terrace, Perth).	Swan District Medical Officer. All Contract Practice Appointments in W.A.
NEW SOUTH WALES. (Hon. Sec. 30-34 Elizabeth Street, Sydney).	Australian Natives Association. Balmain United F.S. Dispensary. Burwood District F.S. Institute. Goulburn F.S. Association. Leichhardt and Petersham Dispensary. M.U. Oddfellows Med. Inst., Elizabetn Street, Sydney. N.S.W. Ambulance Association and Transport Brigade. N. Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Braidwood. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Mudgee. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Granville, Penrith and Auburn. Killingworth Colliery, Newcastle. Seaham Colliery No. 1, Newcastle. Seaham Colliery No. 2, Newcastle. West Wallsend Colliery, Wallsend.
SOUTH AUSTRALIA. (Hon. Sec. 3 North Terrace, Adelaide).	The F.S. Medical Assoc. Incorp., Adelaide.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to the "Medical Journal of Australia" alone, unless the contrary be stated.

All communications should be addressed to "The Editor," "Medical Journal of Australia," B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.